Hinweise zur Fehlerursache, -behebung und Teststrategie am System C A D M U S

Wenn die Fehlerursache bei einem Absturz mit Register-Dump nicht selbst behoben werden kann, senden Sie bitte eine ausgefuellte Kopie des beigefuegten Dump-Formblatts an den PCS Service

Fehlerzustaende des Rechners	moegliche Ursachen	erkennbar an folgen-typischen Merkmalen	Abhilfe
keinerlei Reaktion auf der Konsole nach dem Einschalten	Sicherungen durchgebrannt Prozessor defekt Terminal -Leitung defekt -Terminal defekt -falscher SET-UP-mode serielle Konsol-Schnittstelle defekt Bus-Verlaengerung falsch gesteckt (bei Erweiterungsbox)	Luefter steht	Sicherung austauschen Karte austauschen Leitungen ueberpruefen Ersatz-Terminal Einstellung ueberpruefen Karte austauschen Anschluss der Bus-Verlaengerung kontrollieren
keine Meldung .MINITOR	Speicher -fehlt -defekt -Adressen falsch eingestellt	Cursor springt um 2 Positionen nach rechts	Speicherkarte austauschen Adressen korrigieren
Schmutz-Zeichen auf der Konsole	Setup-mode des Terminals falsch serielle Konsol-Schnittstelle defekt		Setup-Mode neu einstellen Karte austauschen
Keine Terminal-Eingabe moeglich trotz Meldung .MINITOR	Terminal-Rueckleitung defekt Transmit-Baudrate falsch eingestellt Keyboard defekt serielle Konsol-Schnittstelle (Eingang) defekt		Leitung ueberpruefen Setup-mode ueberpruefen Keyboard austauschen Karte austauschen
kein laden von /unix, /nodename/unix oder Standalone-programmen moeglich	Platte noch nicht hochgefahren Stoerungen an der Platte: -Kabelverbindung nicht ok	Meldung: hkerror bn=2 cs=2 err=.... Emulex-controller:	10 sec warten, dann erneuter Versuch ueberpruefen

	gelockert oder ist defekt		richtig stecken; Controller testen
	Swap-Bereich zu klein	Meldung: panic, out of swap-space	Unix mit groesserem Swap-Bereich konfigurieren
	MUNIX falsch konfiguriert oder Root-Fs zerstoert	Meldung: panic: no fs	mit /sunix hochfahren Unix neu konfigurieren oder Root-Fs restaurieren
	Speicher oder Prozessor defekt	illegal opcode	Speicher- und Prozessor testen
	Prozessorhalt (evtl ausgeloest durch Breaktaste an der Systemkonsole oder durch unbeabsichtigtes Druecken der Run-Lampe)	exception 38	Breaktaste an der Systemkonsole disablen Schluesselschalter auf LOCK stellen
double-bus-error, d.h. Busfehler waehrend einer Busfehler-Behandlung	Unix-Konfiguration passt nicht zu einer vorhandenen DMA-Verdrahtung ein 22-bit Device-Treiber wird fuer einen 18-bit Controller verwendet oder umgekehrt	kein Echo an der Systemkonsole bei Eingabe (run-Lampe erloschen)	mit sunix hochfahren; Unix entsprechend der DMA-Verdrahtung neu konfigurieren mit sunix hochfahren; lib3 in /usr/sys anpassen (aus libchoice die passenden Treiber nach lib3 bringen) Unix neu konfigurieren
fsck laeuft nicht	Stackslze von /etc/fsck zu klein /etc/fsck fehlt oder zerstoert File /etc/fstab falsch	unter /etc wird das File core erzeugt Meldung: cannot open /dev/...	Stackslze erhoehen mit /bin/stkslz fsck von einem back-up-Medium restaurieren fstab korrigieren
/etc/fsck liefert Inkonsistenzen	File-System teilweise zerstoert	siehe fsck-Beschreibung	Filesystem reparieren mit fsck oder komplett restaurieren
Absturz beim Uebergang in den multi-user-mode	Zugriff auf nicht vorhandene Controller (fuer Terminals und/oder Drucker) MUNIX falsch konfiguriert	im Register-dump: buserror ... esr=1 access address=ff.... dito	Controller nachruesten oder im Single User Mode hochfahren und die Dateien /etc/ttys und /etc/rc ueberpruefen. In /etc/ttys die angeschlossenen Terminals korrekt eintragen. im Single User Mode mit whatconf die Konfiguration ueberpruefen (auf dz dh und ip achten) Unix neu konfigurieren
Sehr lange Reaktionszeiten nach Uebergang in Multi User Mode	die special-files (unter /dev) fuer die tty's sind falsch generiert	Prozessnummern wachsen rasend an	mit kill -1 1 in den Single User Mode schalten, dann im Directory /dev: make dh (bei MUX-KE) make dz (bei DZV11)

Komponenten / Modell - Uebersicht

Die Tabelle gibt eine Uebersicht ueber alle wichtingen Baugruppen. die in den einzelnen Modellen standardmaessig oder optional vorhanden sind.

	9218		9212		9238		9248	
	Std	Opt	Std	Opt	Std	Opt	Std	Opt
Prozessor QU68030	x	-	x	-	x	-	x	-
Speicher QS512	x	x	x	x	x	x	x	x
Ser.Schnittst. SLU-4	x	o	x	o	x	x	x	x
Multiplexer MUX-KE	x	-	x	-	x	-	x	-
Par. Schnittst. PDI	x	o	x	o	x	o	x	o
Rechnerkopplung BSC-KE	-	x	-	x	-	x	-	x
Ethernet 3COM	-	x	-	x	-	x	-	x
Floating Point Proz. FPP81	-	x	-	x	-	x	-	x
Winchester 10MB	x	-	-	-	-	-	-	-
Winchester 20MB	-	-	x	-	-	-	-	-
Winchester 65MB	-	-	-	-	x	-	x	-
Winchester-Erw. 65MB	-	-	-	-	-	x	x	x
Mini-Floppy 0.5MB	x	o	x	o	-	o	-	o
Streamer 16MB	-	x	-	x	x	o	x	o
Magnetband MB100X	-	x	-	x	-	x	-	x
Laser Drucker LBP	-	-	-	x	-	x	-	x
Bit Map Terminal 2200	-	o	-	x	-	x	-	x

x = vorhanden o = nicht sinnvoll/moeglich - = nicht moeglich

Stand: Dez 83

bmdtest.001 G.Gertheiss 16.1.84

Schnelltest des Bit-Map-Controllers

Umlauf:

1. INIT-Taste druecken am Cadmus-Rechner.

2. mit Minitor ab Adresse 33ffe0 lesen :

```
0000 xxxx xxxx xxxx xxx7 0007 0007 0007 xxfc xxxx xxfc xxxx .......
 e0   e2   e4   e6   e8   ea   ec   ee   f0   f2   f4   f6   f8...
```

e0 CSR soll 0000 sein nach INIT

e2 SETINT beliebig (nicht lesbar)

e4 MAP0 "
e6 MAP1 "

e8 MAUS soll xxx7 sein (X, Y beliebig, keine Maustaste)
ea   "   soll 0007 sein (X, Y   null,   keine Maustaste)
ec   "   "   "
ee   "   "   "

f0 SIO-Steuerwort Kanal 0   unteres Byte soll fc sein
f2 SIO-Datenwort   "   "   beliebig

f4 SIO-Steuerwort Kanal 1   "   soll fc sein
f6 SIO-Datenwort   "   "   beliebig

f8 Pixel-Steuerwort 0 beliebig (nicht lesbar)
fa   "   1   "   "
fc   "   2   "   "
fe   "   3   "   "

Lautet die Antwort des MINITOR wie beschrieben, dann
ist der Controller mit seiner Standard-Adresse vom
ØBus erreichbar.

.Minitor 2.200

.td	test devices
.t	test
.tm	test memory
.tp	test processor
.rf	raw device floppy
.rw	raw device winchester 15MB
.hp }	rm winchester
.rp }	
.rt	tape
.rs	streamer

volcopy (lesen von Streamer)
-S root st(0,0) tape rm(0,1) rm0

/usr/sys/conf.modul !
ver newconf

Schnelltest des Bit-Map-Controllers

3. Den lokalen Prozessor starten : 33ffe0=1

   Im Protokoll des MINITOR muss CSR 0001 sein.

   Am Bit-Map-Monitor soll die Versionsnummer angezeigt werden.

   Am Bit-Map-Controller soll die LED leuchten.

   Durch das lokale Anlaufprogramm wird im SIO-Baustein der Betriebsmodus der Bit-Map-Tastatur eingestellt.

4. Den lokalen Prozessor wieder stoppen : 33ffe0=0

   Im Protokoll des MINITOR muss CSR wieder 0000 sein.

5. Tastatur-Test

5.1 Mit dem MINITOR ab Adresse 33ffe0 lesen;
das Protokoll muss wie bei 1. aussehen.

5.2 Eine Taste der Bit-Map-Tastatur einmal kurz druecken.

Mit dem MINITOR ab Adresse 33ffe0 lesen.

Das untere Byte bei Adresse 33fff0 soll fd sein (Zeichen empfangen), das untere Byte bei Adresse 33fff2 soll zz sein, wobei zz die ASCII-Codierung der Taste ist (zz = 20 bei LEERTASTE).

Wieder mit dem MINITOR ab Adresse 33ffe0 lesen.

Das untere Byte bei Adresse 33fff0 soll wieder fc sein.

Schnelltest des Bit-Map-Controllers

6. Maus-Test

6.1 Mit dem MINITOR ab Adresse 33ffe0 lesen;
das Protokoll muss wie bei 1. aussehen.

6.2 Nach jedem Lesen des Maus-Interface werden die X-Y-Zaehler geloescht.

Beim Protokoll des MINITOR wird das Maus-Interface
bei 33ffe8 zum 1.Mal gelesen,
e0 2.Mal
ec 3.Mal
ee 4.Mal

Folglich darf sich bei jeder Mausbewegung nur der Wert bei 33ffe8 aendern (xxx7).

6.3 Die Bits (2,1,0) zeigen die Tasten (links,mittel,rechts) der Maus an, wobei ein Bit den Wert 0 hat, wenn die Taste gedrueckt wird (waehrend MAUS lesen).

33ffe8	xxx7	keine Taste (oder keine Maus)
	xxx3	linke Taste gedrueckt
	xxx5	mittlere "
	xxx6	rechte "
	xxx0	alle "

Schnelltest des Bit-Map-Controllers

7. Datenwege

7.1 Das Programm im EPROM des Controllers ist versionsabhaengig. Desshalb sind hier nur die ersten 16 Worte zum Vergleich angegeben.

Mit MAP0-Register = 0 wird das EPROM selektiert.
Mit MINITOR ab Adresse 33ffe0=0 0 0 0 schreiben.

Mit MINITOR ab Adresse 300000 lesen :

0005 fa00 0000 0100 0000 014a 0000 014a 0000 014a 0000 ....

7.2 Zum Test des lokalen RAM muss der lokale Prozessor gestartet werden, damit der Speicher-Refresh anlaeuft.
Mit MAP1-Register = 2 wird das RAM selektiert.

Mit MINITOR ab Adresse 33ffe0=1 0 0 2 schreiben.

Mit dem MINITOR koennen nun beliebige Daten ab Adresse 320000 geschrieben werden und sollen nach beliebiger Zeit wieder gelesen werden koennen.

7.3 Zum Test des Bildspeichers sollte der lokale Prozessor gestoppt werden, damit er nicht durch unbeabsichtigte Aktionen den Bildspeicher loescht.
Der Pixelprozessor soll die einzuschreibenden Daten direkt in den Bildspeicher uebertragen.

Mit MAP1-Register 1 = 4 wird der Pixelprozessor und das Steuerwort 0 selektiert.

Mit MINITOR ab Adresse 33ffe0=0 0 0 4 schreiben,
auf Adresse 33fff8=3f00 schreiben.

Ab Adresse 320000.100=5555555555555555 schreiben,
320100.100=aaaaaaaaaaaaaaaa schreiben.

Beide Muster muessen auf dem Bit-Map-Monitor unterscheidbar und per MINITOR lesbar sein.

Schnelltest des Bit-Map-Contollers

8. Interrupt an den QBus.

Die Interrupt-Leitung des QBus muss zwischen dem CADMUS-Prozessor und dem Bit-Map-Controller lueckenlos sein.

Zum Test wird im Speicher des CADMUS-Rechners ein kleines Programm gestartet, aus dem der Rechner nur durch den einwandfreien Interrupt ohne Fehlermeldung in den MINITOR (.) gelangt.

Der lokale Prozessor muss gestartet und der QBus-Interrupt freigegeben werden.

Der CADMUS-Prozessor setzt alle Interupt-Ebenen aktiv, schreibt eine Vektornummer ins QINT-Register des Controllers und loest damit selbst den Interrupt aus.

Mit MINITOR auf Adresse 33ffe0=41 schreiben.

Mit MINITOR folgende Daten schreiben :

```
e0=ff 8014

444=46fc 0 247c 33 ffe8 34bc 38 60fe 0 0 0 0

g444
```

MUNIX-Systemabsturz am ..... um ....., aufgezeichnet von .....

vermutete Absturzursache bzw. Verdacht: .....
.....

Absturzprotokoll:

registers	A0	A1	A2	A3	
	A4	A5	A6	A7	US .....
	D0	D1	D2	D3	
	D4	D5	D6	D7	

mmu1/2/3/4/6/8/e ...../...../...../...../...../...../.....

*Text-Fehlerursache: .....

cpustate ..... *access address ..... instruction register .....

status reg ..... *pc ..... *ssr .....

*procedure addresses : lineno

.....:.....	.....:.....	.....:.....	.....:.....
.....:.....	.....:.....	.....:.....	.....:.....
.....:.....	.....:.....	.....:.....	.....:.....
.....:.....	.....:.....	.....:.....	.....:.....

mina7 .....

Hinweise: Die Werte der Register, die nicht auf der Systemkonsole angezeigt werden, sind gleich 0.

Es ist nicht notwendig alles von der Systemkonsole abzuschreiben. Die wichtigsten Informationen, die unbedingt notiert werden sollen, sind mit * markiert.

NAME

configuration information – table of interrupt vector and device addresses

SYNOPSIS

cat /usr/sys/confinfo

DESCRIPTION

Confinfo is a table of the interrupt vectors and device addresses used in MUNIX. Addresses are listed both in octal and hex notation.
Please note that the octal values of interrupt vector addresses have to be used to switch DEC or DEC-compatible controller boards. The MC68000 processor assumes them to be interrupt vector numbers and computes the memory address by multiplying with 4 (resulting in the hex values).

Configuration Information

Device	Interrupt Vec.		Device Address		max. Units/Lines
	octal	hex	octal	hex	
console	60	C0	777560	FFFF70	1
bip	70	E0		0	1
ether	100 104 110	100 110 120	764330 764332	FFE8D8 rx FFE8DA tx	1
lbp	120	140	770000	FFF000	1
kedqs			770400	FFF100	4 Lines
port 0	140	180	770440	FFF120-14F	
port 1	144	190	770520	FFF150-17F	
port 2	150	1A0	770600	FFF180-1AF	
port 3	154	1B0	770660	FFF1B0-1FF	
rl	160	1C0	774400	FFF900	4 Drives
hl	164	1D0	774420	FFF910	4 Drives
vp	174 204	1F0 plot 210 print	777400	FFFF00	1
lp	200	200	777514	FFFF4C	1
hk	210	220	777440	FFFF20	8 Drives
rk	220	240	777400	FFFF00	4 Drives
tm	224	250	772520	FFF550	8 Drives
ot/ox	230	260	775600 775640	FFFB80 csr FFFBA0 data	4 Drives
st alter.	240	280	777600 777640	FFFF80 csr FFFFA0 data	1 Drive

number

Configuration Information					
Device	Interrupt Vec.		Device Address		max. Units/Lines
	octal	hex	octal	hex	
rm	254	2B0	776700	FFFDC0	8 Drives
hp	254	2B0	776700	FFFDC0	2 Drives
rx2	264	2D0	777170	FFFE78	2 Drives
hx2	270	2E0	777150	FFFE68	2 Drives
st	270	2E0	777600 777640	FFFF80 csr FFFFA0 data	1 Drive
tty					8 Lines
1	300	300	776500	FFFD40	
2	310	320	776510	FFFD48	
3	320	340	776520	FFFD50	
4	330	360	776530	FFFD58	
5	340	380	776540	FFFD60	
6	350	3A0	776550	FFFD68	
7	360	3C0	776560	FFFD70	
8	370	3E0	776570	FFFD78	
slu					7 Lines and Console (port 0)
0	304	310	776040	FFFC20	
1	300	300	776000	FFFC00	
2	314	330	776140	FFFC60	
3	310	320	776100	FFFC40	
4	324	350	776240	FFFCA0	
5	320	340	776200	FFFC80	
6	334	370	776340	FFFCE0	
7	330	360	776300	FFFCC0	
dz(v)					32(16) Lines
1st	330	360	760100	FFE040	
2nd	340	380	760110	FFE048	
3rd	350	3A0	760120	FFE050	
4th	360	3C0	760130	FFE058	
dh	340	380	760020	FFE010	16 Lines
td	370	3E0	777600 777640	FFFF80 csr FFFFA0 data	2 Drives

FILES

/usr/sys/confinfo

ADRESS-SCHALTER

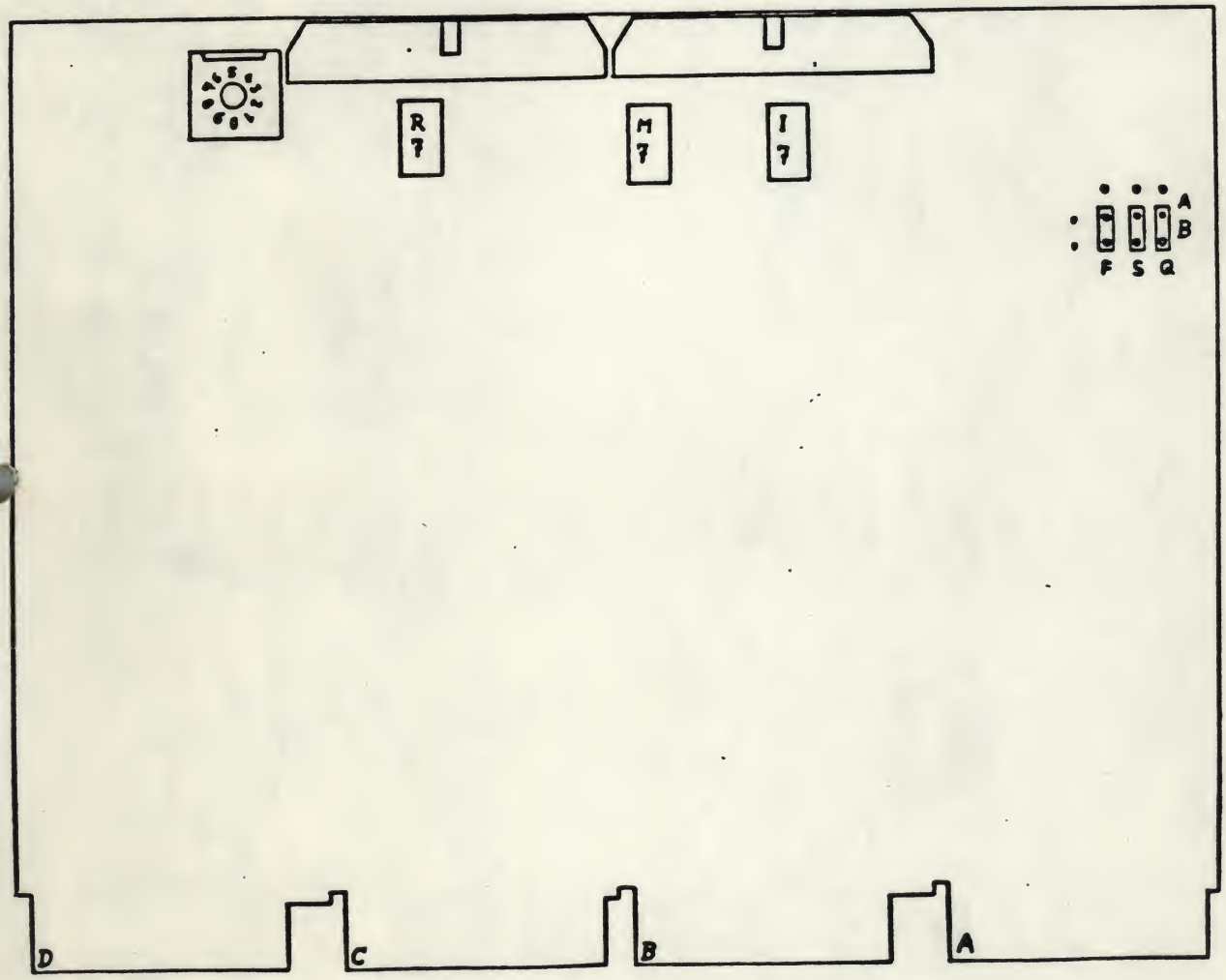
Schalterstellung	Speicherbereich
0	$000000 - $07FFFF
1	$080000 - $0FFFFF
2	$100000 - $17FFFF
3	$180000 - $1FFFFF
4	$200000 - $27FFFF
5	$280000 - $2FFFFF
6	$300000 - $37FFFF
7	$380000 - $3FFFFF
8	nicht selektiert
9	nicht selektiert

PARITY-JUMPER

Jumper Stellung

F	●	Force-Parity-Error disable
F	B	Force Parity-Error enable
S	A	S-Parity disable
S	●	S-Parity enable
Q	A	Q-Parity disable
Q	●	Q-Parity enable

● - Standard



ADDRESS RANGE	JUMPERS** J9	J10	11	J12	
0K-128K*	0	0	0	0	
0K-128K**	0	0	0	0	
128K-256K	1	0	0	0	
256K-384K	0	1	0	0	
384K-512K	1	1	0	0	1MB
512K-640K	0	0	1	0	
640K-768K	1	0	1	0	
768K-896K	0	1	1	0	
896K-1024K	1	1	1	0	2MB
1024K-1152K	0	0	0	1	
1152K-1280K	1	0	0	1	
1280K-1408K	0	1	0	1	
1408K-1536K	1	1	0	1	3MB
1536K-1664K	0	0	1	1	
1664K-1792K	1	0	1	1	
1792K-1920K	0	1	1	1	
1920K-2048K	1	1	1	1	4MB

K ≙ K Word

Address Range Selection

Table 3-2

Note:

0 = Removed

I = Installed

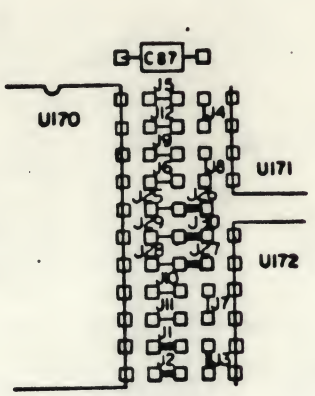
* Non Extended Address

** Extended Address Option
J24 removed
J23 installed

	J23	J24
Extended Address	I	R
Non Extended Address	R	I

Table 3-3

Jumper 23 Installed



VIEW A

VIEW C

VIEW B

Jumper Locations
Figure 3-2

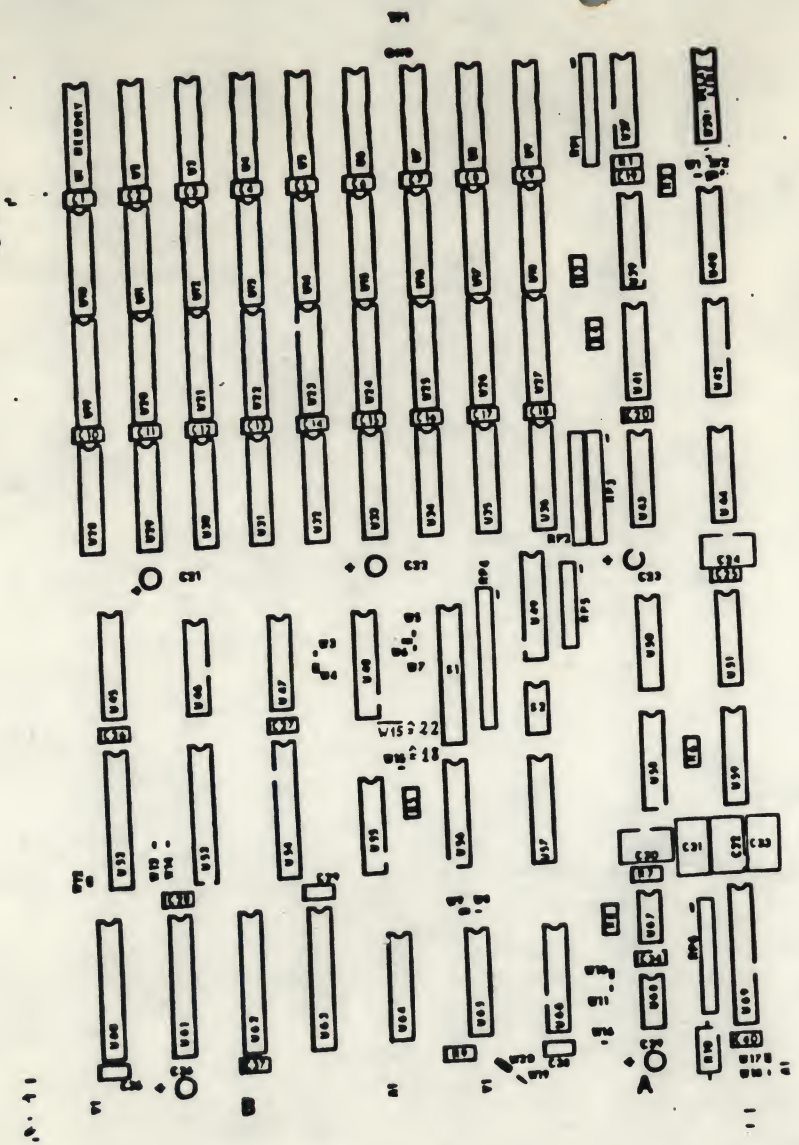


Figure 1.1 Jumper and Switch Placement

ADDRESS RANGE	S1-9	S1-8	S1-7	S1-6
0K-128	0	0	0	0
128K-256K	0	0	0	1
256K-384K	0	0	1	0
384K-512K	0	0	1	1
512K-640K	0	1	0	0
640K-768K	0	1	0	1
768K-896K	0	1	1	0
896K-1024K	0	1	1	1
1024K-1152K	1	0	0	0
1152K-1280K	1	0	0	1
1280K-1408K	1	0	1	0
1408K-1536K	1	0	1	1
1536K-1664K	1	1	0	0
1664K-1792K	1	1	0	1
1792K-1920K	1	1	1	0
1920K-2048K	1	1	1	1

K ≙ K Word

* To use addresses above 128K, 22 bit addressing must be used. In this case, the starting address will be the sum of the address in Table 1.5 and the lower limit of the range in Table 1.6.

** 0 = OPEN (OFF)
1 = CLOSED (ON)

Table 1.5. - ADDRESS RANGE SELECTION

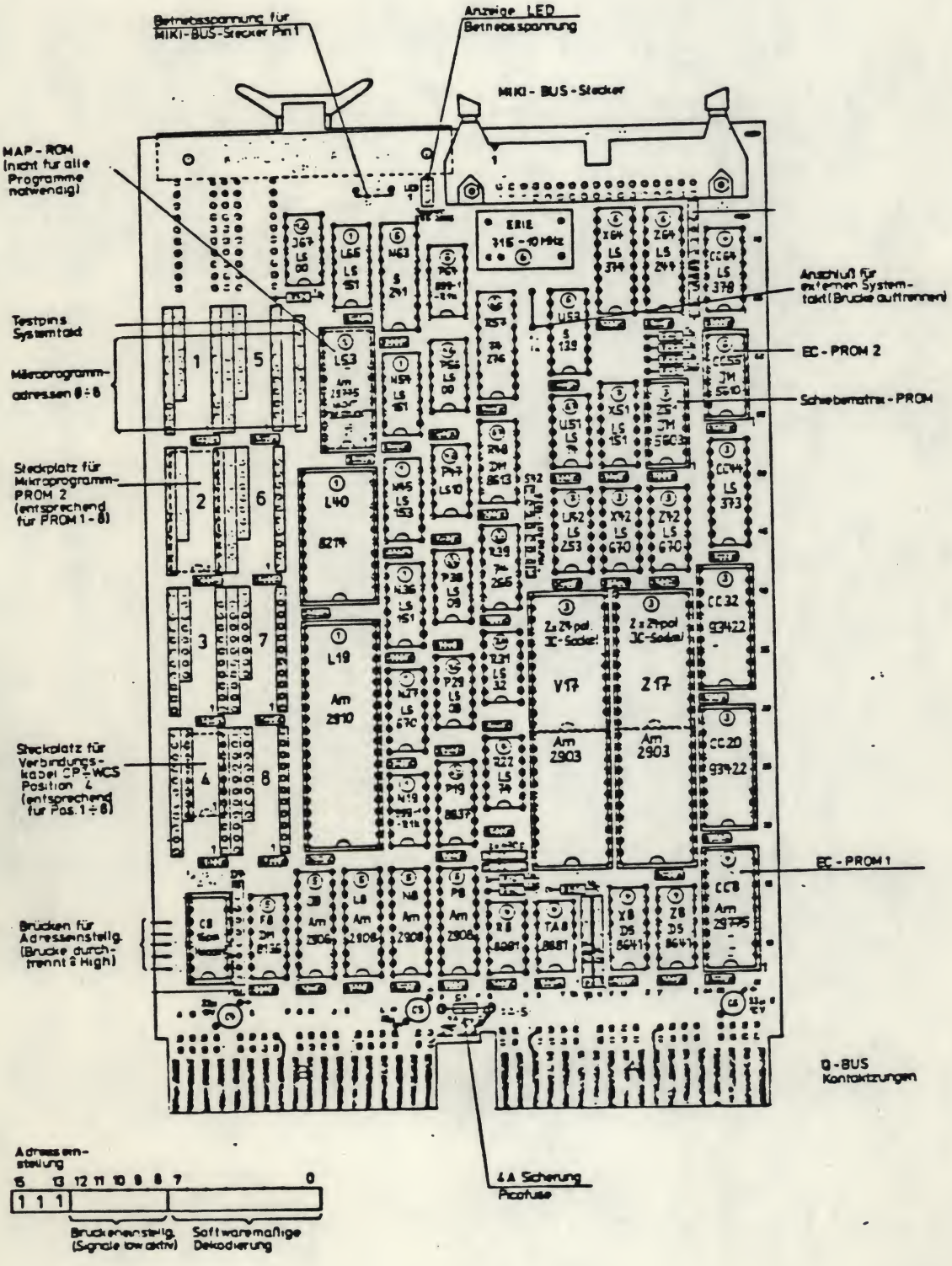
I/O SPACE	S1-10
2K I/O	Close
4K I/O	Open

Table 1.6 I/O Space Selection

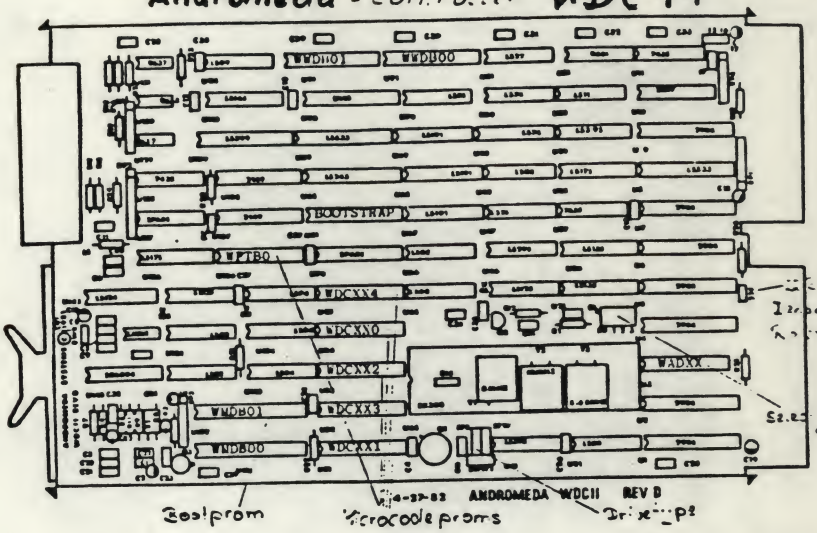
National Semiconductor Corporation
2900 Semiconductor Drive, Santa Clara, Calif 95051
SIZE A | DWG NO. 409103882-001 | A
SCALE | SHEET 8 OF

Die Header- und PROM-Positionen sind dem Plan zu entnehmen

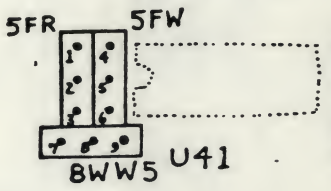
Layout Kommunikationsprozessor CP2 MUX-KE



Andromeda - Controller WDC 11



Drivetype:



Jumper Pair:	Pins
5FR	1-2
8FR	2-3
5FW	4-5
8FW	5-6
5WW	8-9
8WW	7-8

Drive Type	Jumpers Installed
8" Winchester	8WR, 8WW
5.25" Winchester	5WW
8" Floppy	8FR, 8FW
5.25" Floppy	5FR, 5FW

Bootproms:

Drivetyp	Master	Bezeichnung	Promtyp
TH602 + TH801	R900.120	TH603	23S23S42
TH803 + TH104	R900.121	TH503	"
BASF6185 + TH104	R900.122	BASF6185	"

Microcodeproms:

Drivetyp	Revisionlevel
TH603	E + F
TH603	E + F
BASF 6185	F

Revisionlevel F-Proms:

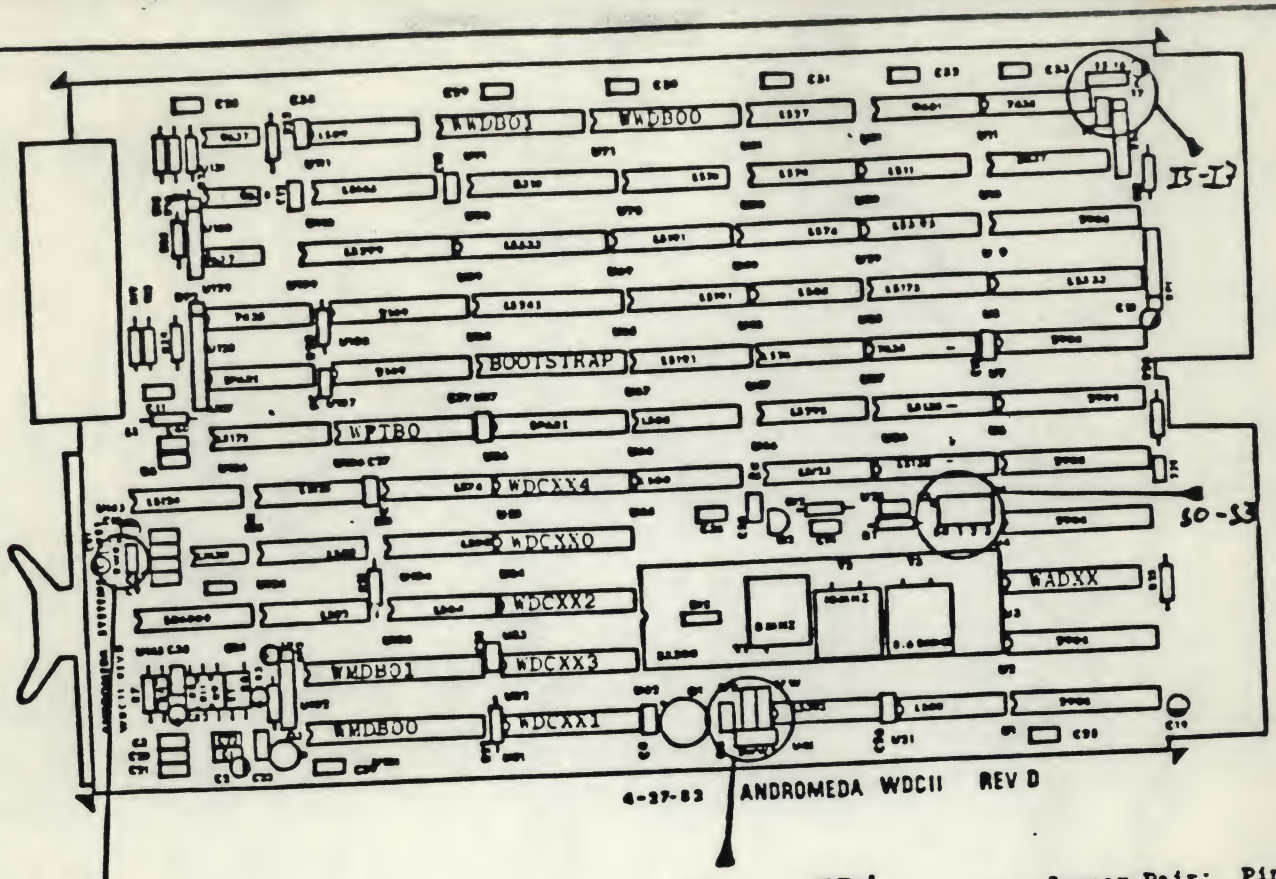
Master	Bezeichnung	Promtyp
R900.130	WDCCT 0	23LS18S
R900.131	WDCCT 1	"
R900.132	WDCCI 2	"
R900.133	WDCCI 3	"
R900.134	WDCCI 4	"
R900.135	WFTBA	"

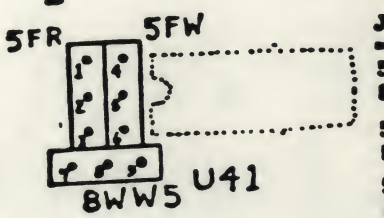
Selectjumpers

B3	An RK05 controller with registers addressed from 777400 thru 777416, and an interrupt vector of 220 (WDC11-B), or an RL01/2 controller with registers addressed from 774400 thru 774416, and an interrupt vector of 160 (WDC11-C)
B2	An RX02 controller with registers addressed from 777170 thru 777172, and an interrupt vector of 264
B1	A bootstrap ROM, addressed from 773000 thru 773776
B0	Four maintenance registers, addressed from 770500 thru 770506 (This jumper -should NEVER be installed by the user. Writing into one of these registers may result in loss of disk data.)

Personalitymodules:

WPC5W	Personality card for 5.25" Winchester drives if more than one Winchester drive is used
WPC8W	Personality card for 8" Winchester drives
WPC5F	Personality card for 5.25" floppy drives
WPC8F	Personality card for 8" floppy drives





Jumper Pair:	Pins
5FR	1-2
8FR	2-3
5FW	4-5
8FW	5-6
5WW	8-9
8WW	7-8

DEV-TYP	JUMPER	DEV-Select			Interrupt-Priority		
8"-WD	8WR, 8WW rem	RL02/RK05	S3	inst	4		
5¼"-WD	5WW inst	RX02	S2	inst	5	I5	inst
8"-FD	8FR, 8FW rem	B-ROM	S1	rem	6	I6	rem
5¼"-FD	5FR, 5FW inst	Maint.	S0	rem	7	I7	rem

Zusätzliche Brücken:

22E install

PC remove

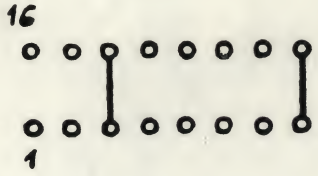
	Tag	Name
Bearb	30.9.	Gütz
Gepr	30.9.	Gütz

WDC11-KONFIGURATION
QU68000-Compact-System

Floppy-Drive TM 100-4 (TANDON)

5 1/4" 1MByte

- Heoder 1E:

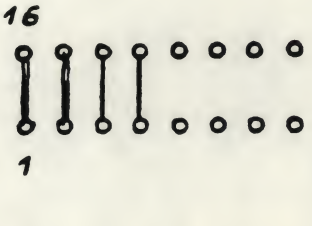


- Von der Terminierung 2F stecken die Pins 3,4,6 und 7 nicht in der Fossung !!!

Winchester-Drive TM 603 SE (TANDON)

5 1/4" 14.4 MByte

- Header U21:



- Terminierung U24 steckt in der Fossung.

				Fremdtoleranzen			
				82	Tag	Name	WINCHESTER/FLOPPY - KONFIG. QU 68000 Kompaktsystem
				Bearb	24.9.	W. Schulz	Maßstab
				Gepr			
				Norm			
Aus-gabe	Änderung	Tag	Name	DCB COMPUTER SYSTEME			

WDC11 Configuration Sheet

Part # WDC11- ___ S/N ___'/'___

S.O.# '/' Customer ___'/'___ Date Shipped '/'

Jumpers:		I/R	Function (I=installed, R=removed)
Device Select:	S0	R	Maintenance Registers
	S1	R	Bootstrap ROM
	S2	I	Floppy Disk Controller
	S3	I	Winchester Disk Controller
Interrupt Level:	I5	I	Interrupt level 5
	I6	R	Interrupt level 6 or 7
	I7	R	Interrupt level 7
Winchester:	8WR, 8WW	R	8" Winchester Controller
	5WW	I	5.25" Winchester Controller
Floppy:	8FR, 8FW	R	8" Floppy Controller
	5FR, 5FW	I	5.25" Floppy Controller

PROMS:	Function	Installed type
	Address Recognition	WAD CA
	Bootstrap ROM	W CC 2P2F
	Microcode	WDC CC 0-Y

Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig

Ausgabe	Änderung	Tag	Name

Freimaßtoleranzen

	Tag	Name
Bearb	24.5	W. Ich
Gepr		
Norm		

DCS PERIPHERIE COMPUTER SYSTEME

WDC 11 - KONFIGURATION
QUBF000 Kompaktsystem

Maßstab

TANDON - Winchester drive TM503 (5 MB)

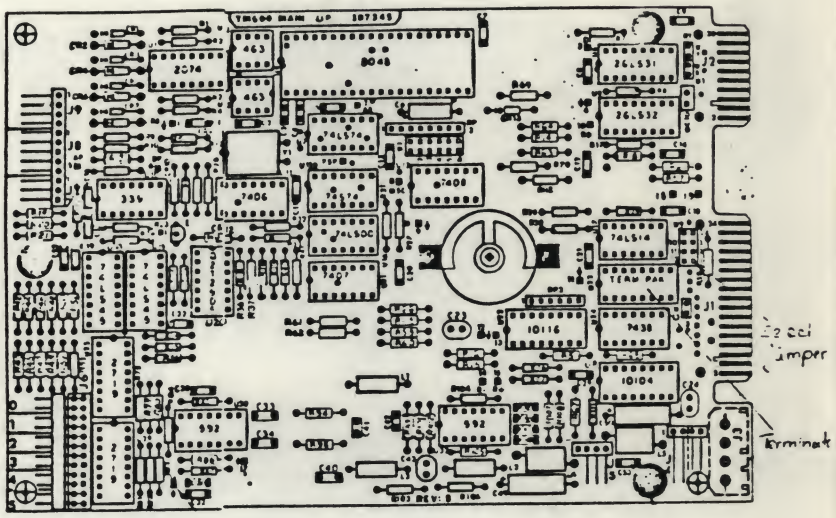
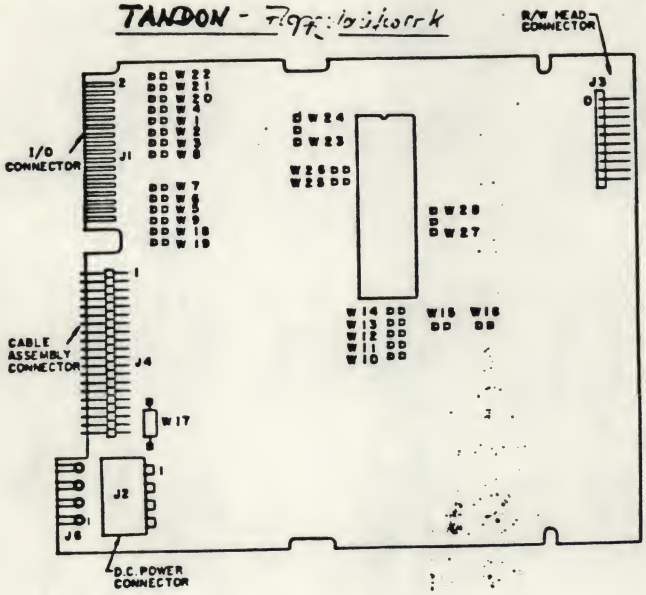


TABLE 3-3
OPTION PROGRAMMING GUIDE

W1-W3 Jumper	Function	Factory Programmed	Usage
W1	Track Fault	O	Install for excess track fault.
W2	Test	O	Install for factory test.
W3	Disable Limit	O	Install to disable soft limits.
W4	Spin Select	O	Install for spin select.
W5	Tracks	S	Install for standard version only.
W6	Motor Type	—	Install for Type 1.8° motor.
RTW7	Read Terminator	I	Close only at end drive of daisy chain data. Closed for radial data.
RTW8	Write Terminator	I	
S4W9	Drive Select 4	O	Install one of four plugs only. Plug corresponds to drive address.
S3W10	Drive Select 3	O	
S2W11	Drive Select 2	O	
S1W12	Drive Select 1	I	
SPW13	Three Disk	SO3	Close for Model TM503 only.
U22	Terminator Pack	I	Install in end drive of daisy chain.

TANDON - Floppy Disk Drive

TM 101-4 (8" 2.0)



MOTOR ON (W12)

The standard operation has a Motor On signal controlling the drive motor. W12 is deleted.

The motor can be controlled by Drive Select or Motor On when W12 is installed.

W12*	MOTOR IS ENABLED BY
—	Motor On.
X	Motor On or Drive Select.

STEP CONFIGURATION (W13, W14)

Optional drive configurations can be selected using W13 and W14. W13 and W14 deleted is standard.

W13*	W14*	STEP CONFIGURATION IS
—	—	For use at three millisecond step rate.
—	X	Self-Seek cycle.
X	—	For use within six millisecond or slower step rate.
X	X	Not used.

DRIVE SELECT (W1 THROUGH W4, W8, W18, W29)

Jumper blocks W1 through W4, W8, W18 and W29 control the drive unit number select. Jumper number W1 is used for Drive 0. W2 is used for Drive 1. W3 is used for Drive 2. W4 and W18 are used for optional Drive 3. W29 is used for Drive 3.

The drive is always selected when W8 is installed.

W1*	W2*	W3*	W4*	W8*	W18	W29	DRIVE SELECT
X	—	—	—	—	—	—	Selects Drive 0 via J1-10.
—	X	—	—	—	—	—	Selects Drive 1 via J1-12.
—	—	X	—	—	—	—	Selects Drive 2 via J1-14.
—	—	—	X	—	—	X	Selects Drive 3 via J1-6.
—	—	—	X	—	X	—	Selects Drive 3 via J1-34 (optional).
—	—	—		X	—	—	Multiplex: Used in a single drive system that does not provide drive select lines.

SIDE SELECT (W5, W6, W7)

W5 and W6 are standard. W7 is an option; it is used alone.

W5	W6	W7	SIDE SELECT
X	X	—	For single-sided and double-sided drives.
—	—	X	Direction (J1-18 N FWD) is used for optional side select.

READY I/O (W9, W19)

Ready is output on Pin 6 only when W9 is installed. Ready is output on Pin 34 only when W19 is installed.

W9	W19	READY
X	—	Ready signal on J1-6 (optional).
—	X	Ready signal on J1-34.

READY OPTION MODES (W10, W11)

The Ready option jumper programming is defined as:

W10	W11	READY IS A FUNCTION OF
—	—	Latch closed; diskette in place; and diskette not changed or removed.
—	X	Latch closed. Does not require drive select line to be toggled to reinitiate ready line.
X	—	Latch closed; diskette in place; and diskette not changed or removed; index pulses detected; motor enabled and up to speed.
X	X	Latch closed; index pulses detected; motor enabled and up to speed. Does not require drive select line to be toggled to reinitiate ready line.

STEPPER MOTOR CONTROL (W15, W16)

The power to the stepper motor is controlled by Drive Select when W15 is in place. The stepper motor is enabled all the time when W16 is in place.

W15	W16	STEPPER MOTOR CONTROL OPTION
X	—	Power is available to the stepper motor only when the drive is selected. On reselection, the user must ensure track location.
—	X	Power is continuously available to the stepper motor.

GROUND ISOLATION (W17)

The power ground is isolated from the chassis ground when W17 is removed. Ground isolation can also be accomplished by deletion of the chassis-to-PCBA ground jumper.

W17	GROUND
—	Isolates the logic ground from the chassis ground.
X	Connects the logic ground to the chassis ground. In addition, the chassis-to-PCBA ground jumper must be in.

SPECIAL I/O J1-4 (W20, W21, W27, W28)

Diskette inserted status (output), W20 only.

"In Use" illuminates the front panel L.E.D when the drive is selected. W21 and W27 are installed, W28 is deleted, and a true (low) signal is applied to J1, Pin 4.

W20	W21	IN USE, DISK IN
X	—	Provides "Disk In" signal to the system via J1-4.
—	X	Provides "In Use" signal from the system to the drive via J1-4.

W21	W27	W28	ACTIVITY L.E.D.
X	X	—	Activity L.E.D. function of "In Use", from the system, and Drive Select.
—	—	X	Activity L.E.D. function of Drive Select only.

ERASE TYPE (W25, W26)

W25	W26	ERASE
X	—	Erase delay used with standard tunnel erase read/write heads.
—	X	No erase delay. Straddle erase read/write heads used (optional).

DOOR LOCK SOLENOID (W22)

The door lock solenoid can be activated from J1, Pin 2, with both W22 and the optional door lock solenoid installed.

W22	DOOR LOCK SOLENOID
—	For drives with no door lock solenoid.
X	For drives with a door lock solenoid (optional).

WRITE PROTECT INHIBIT (W23, W24)

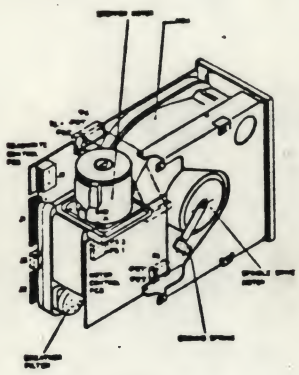
The standard Write Protect feature is W23 only. Write Protect control is inhibited when W24 is installed and W23 removed.

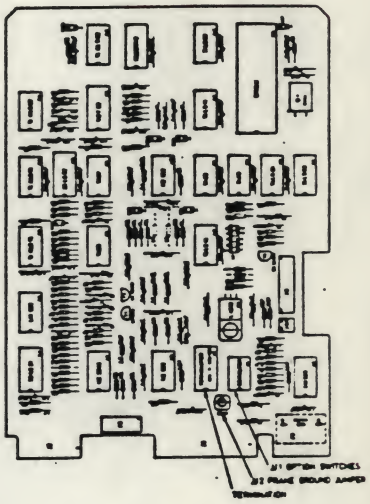
W23	W24	WRITE PROTECT
X	—	Write Protect control, in response to a write protected diskette, inhibits Write Gate, thus disallowing the flow of write data to the read/write heads.
—	X	Write Protect control is inhibited.

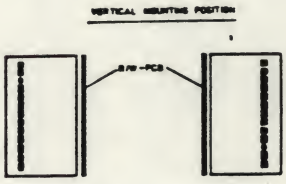
Brückenbelegung TH 101-4 im Modell 110
Modell 210, Modell 212

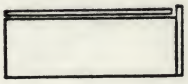
W1	R	W8	R	W15	R	W22	R
W2	I	W9	R	W16	I	W23	I
W3	R	W10	R	W17	I	W24	R
W4	R	W11	I	W18	R	W25	I
W5	I	W12	R	W19	I	W26	R
W6	I	W13	R	W20	R	W27	R
W7	R	W14	R	W21	R	W28	I

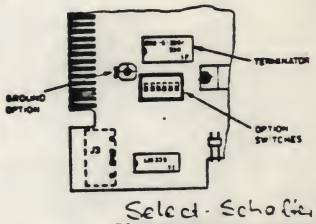
BASF - Winchesterdrive 6185 (B922.011)



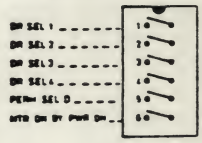




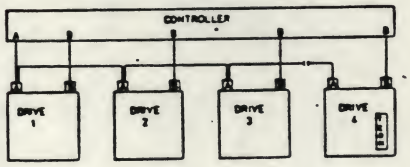




Select-Schalter



DAISY CHAINED SYSTEM:



REVISION LEV[illegible]BELLE

REV NR	LAYOUT \ IC	890017	890016	890013	890012	890010	163	165	164	BEMERKUNG
1	B1	C	L	F	G/H	C	A	A	A	Original, innere Spuren schwach
2	B1	C	H	F	G/H	C	A	A	A	innere Spuren ok!
3+4	B1	C	H	F	G/H	D	A	A	A	autom Boot möglich 27.11.84 ok
REV NR	**LAYOUT \ K**	**890014**	**890016**	**890013**	**890012**	**890010**	**890014**	**890015 -02**	**890015 -01**	**BEMERKUNG**
5	B1	C	M	G	J	E	A	B	B	Rk Φ5 boot ok
REV NR.	**LAYOUT \ IC**	**890017**	**890028**	**890013**	**890012**	**890023**	**890014**	**890015 -02**	**890015 -01**	**BEMERKUNG**
6	D	O	N	G	J	H	A	B	B	Boot disable möglich
7	E	C	P	H	K	H	A	C	C	
8	E	C	P	H	K	K	A	C	C	

ADRESSE

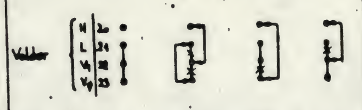
X = auftrennen, C = Brücke anlegen!

Adresse:	177170	177150	164000	164400
Std.	X			
Anw.				

VEKTOR

X = auftrennen, C = Brücke anlegen!

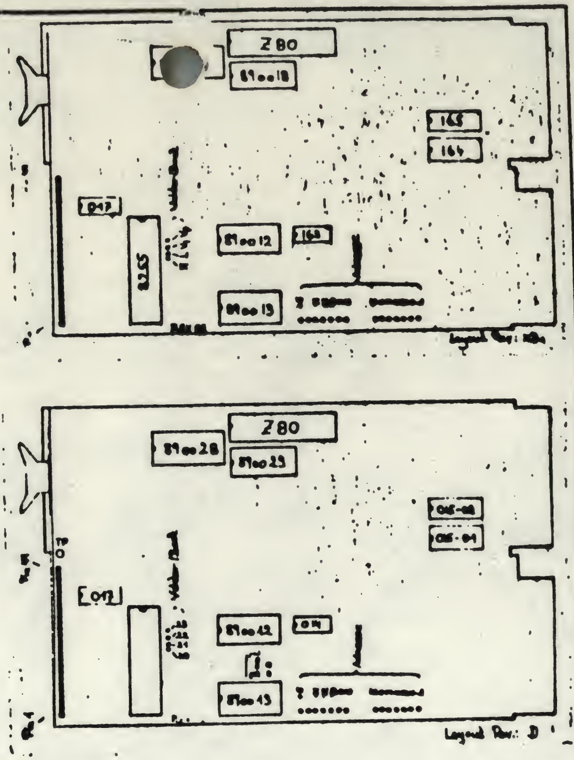
erst ab Rev nr 3



Boot	B	B	Autom	Autom
Vektor-A	264	270	264	270
Std	x		EGL	
Anw				

Brücke	Stellg	Std.	Anw.	Bedeutung
Boot	R J	x		enable disable

R = entfernt
J = eingesetzt



Änderung	Tag	Name
C Rev E	21.8.	[illegible]

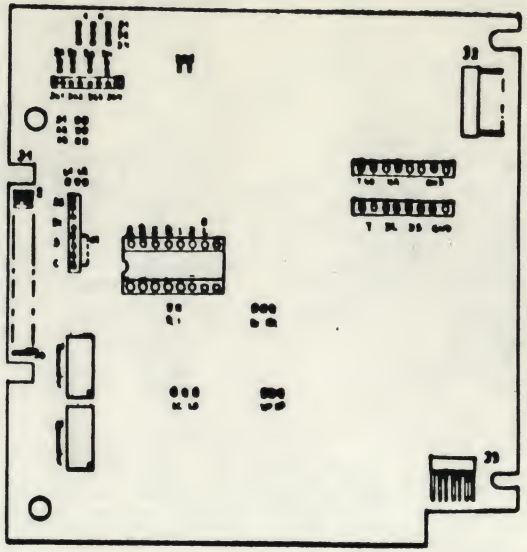
Einstelltabelle für:
AED Controller Flex Φ2
B 900. 205.3

PCS PERIPHERE COMPUTER SYSTEME

Nm DMP	Controller AED		Controller [illegible]		Controller PCS #2		Controller	
	Drive 0	Drive 1	Drive 0		Drive 0	Drive 1	Drive 0	Drive 1
DS1	–		–		–			
DS2		–		–		–		
DS3								
DS4								
J1								
J2								
J3								
J4								
J J10								
J1								
J2	–	–	–	–	–	–		
J3								
L1	–	–	–	–	–	–		
L2								
L3	–	–	–	–	–	–		
DC	–	–						
D		]#1						
C	–		–	–	–	–		
A	–	–	–	–	–	–		
B			–	–	–	–		
K	–	–						
R	–	–	–	–	–	–		
I	–	–	–	–	–	–		
H								
HL	–	–						
J2								
LC	–	–	–	–	–	–		
LS								
J1	–	–	–	–	–	–		
J4	–	–	–	–	–	–		
WP	–	–	–	–	–	–		
NP								
TK0								
HA								
Y	–	–	–	–	–	–		
DL								
DS			–	–	–	–		
Terminator	–		–		–			

Nomb. Drive	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
D1																
D2																
D4																

Zeichenerklärung:
Removed
Installed –



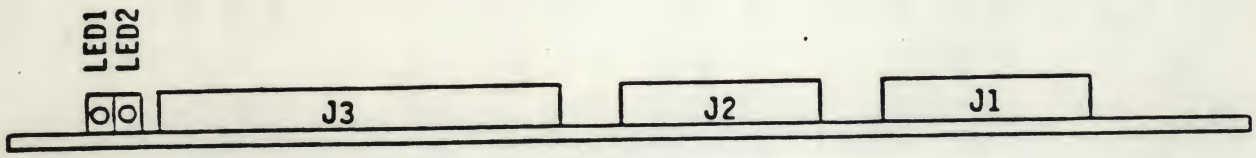
#1 Brücke zwischen D und C wie in Zeichnung oben
#2 siehe Anweisung 800.

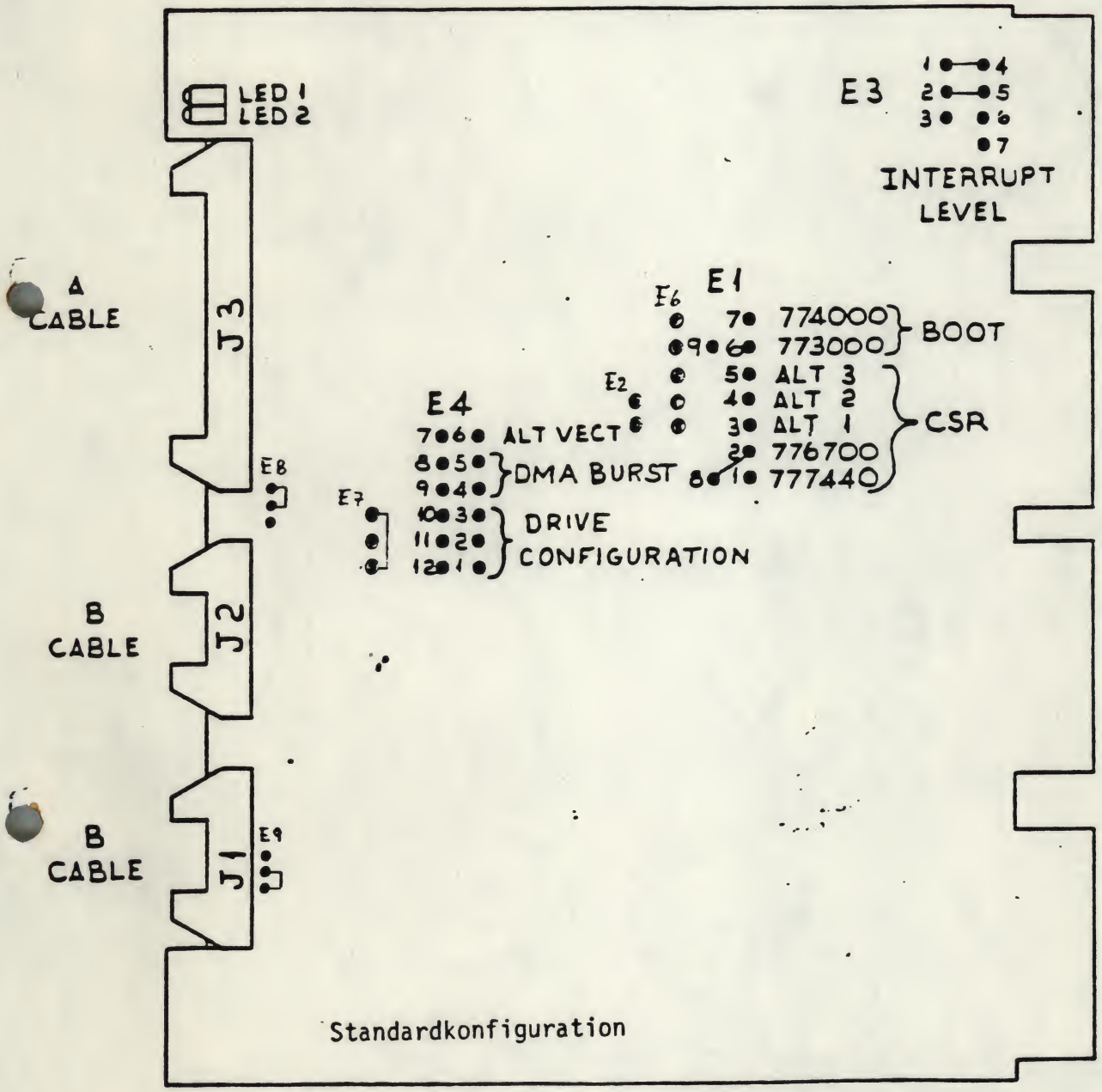
	Drive Einstelltabelle für YE-DATA : YD-174
PCB	B 923.000 .3
	8" FLOPPY

TABLE 5.1

ACTIVITY DISPLAY DATARAM (tm)

OPERATION	RESULTING DISPLAY	
	LED1	LED2
Write Headers	ON	OFF
Write Data	ON	OFF
Read Headers	OFF	ON
Read Data	OFF	ON
Write Check	ON	ON





CONFIGURATION JUMPER POINTS

FIGURE 5.2

5.6 Vector, Bus Address Options (Refer to Figure 5.2)

5.6.1 Vector Address

The standard RH11 Interrupt Vector is 254_8. This vector is implemented with jumper E4-6 to E4-7 removed. The alternate vector is 210_8 and is implemented by installing jumper at E4-6 to E4-7.

5.6.2 Q-BUS Address

The standard RH11 Bus Address for CS1 is 776700_8 and is implemented by installing jumper E1-2 to E1-8. The alternate address of CS1 is 777440_8 and is selected by removing E1-2 to E1-8 and installing E1-1 to E1-8. Three other alternate addresses can be implemented with revisions to PROM in location F4 and jumpers E1-3 thru 5 with E1-8.

5.6.3 Priority Interrupt Level Option

The standard priority level for the SO4/D is level 5. The priority may be changed to other levels by jumpers. Remove all E3 jumpers, then install jumpers according to the chart below.

	Add Jumper
Priority 4	E3-2 to E3-4 E3-3 to E3-5
Priority 5	E3-1 to E3-4 E3-2 to E3-5
Priority 6	E3-1 to E3-5 E3-3 to E3-7
Priority 7	E3-1 to E3-5 E3-6 to E3-7

5.7 Bootstrap Address Options

On board bootstrap may be selected at either of two addresses or disabled as shown below:

- To boot from 773000_8 install E1-6 to E1-9.
- To boot from 774000_8 install E1-7 to E1-9.
- For no bootstrap, remove all jumpers from E1-7, 8, and 9.

5.8 Configuration Jumpers

The S04/A and S04/A1 controllers each support seven possible combinations of drives, as listed below. Any of the seven combinations may be selected with jumpers.

5.8.1 S04/A Drive Combinations

Physical & Logical Unit or Plug Number	Physical Drive Type	Logical Drive Type	Jumper E4 Pins 10-3	11-2	12-1
✓* 0	Fujitsu*	RM02	OUT	OUT	OUT
1	Fujitsu*	RM02			
0	Fujitsu*	RM02	OUT	IN	OUT
1	80MB SMD	RM02			
0	300MB SMD	RM05	IN	IN	OUT
1	80MB SMD	RM02			
* 0	80MB SMD	RM02	OUT	OUT	IN
1	Fujitsu*	RM02			
0	80MB SMD	RM02	OUT	IN	IN
1	80MB SMD	RM02			
0	80MB SMD	RM02	IN	OUT	IN
1	300MB SMD	RM05			
0	300MB SMD	RM05	IN	OUT	OUT
1	300MB SMD	RM05			

*Fujitsu Model M2312K84MB Mini-Winchester

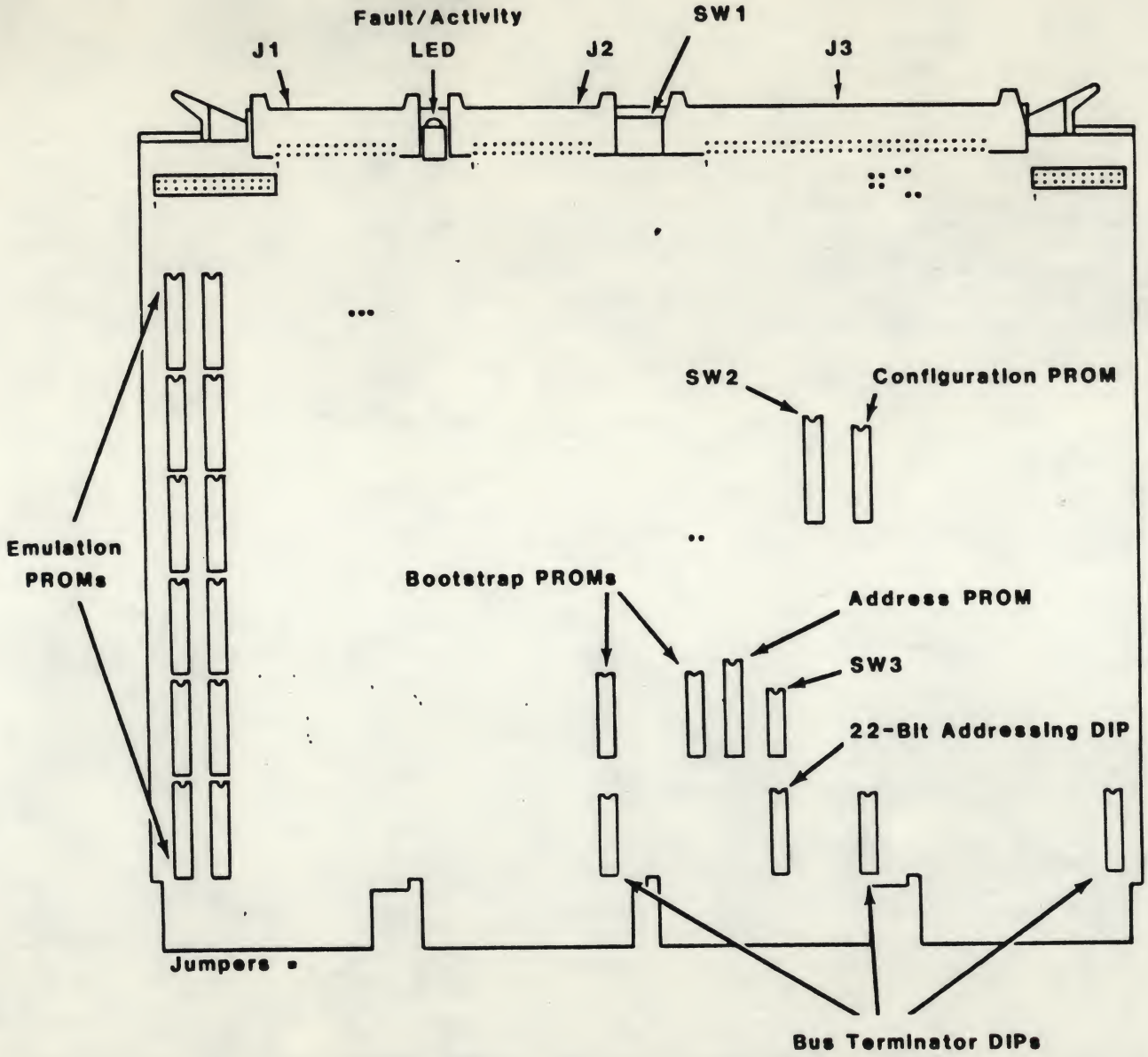


Figure 3-1 SC02 Controller Assembly Emulex (hk)

A.3 USER SELECTABLE OPTIONS

Several other options including the register starting address for the SC02/C can be user selected. The functions of the switches that select those options are defined in Tables A-4, A-5 and A-6, below.

TABLE A-3
FACTORY SWITCH SETTINGS

Switch	Setting	Switch	Setting	Switch	Setting
SW1-1	OFF	SW2-1	OFF	SW3-1	OFF
SW1-2	OFF	SW2-2	OFF	SW3-2	ON
SW1-3	OFF	SW2-3	OFF	SW3-3	OFF
SW1-4	OFF	SW2-4	OFF	SW3-4	OFF
		SW2-5	OFF	SW3-5	OFF
		SW2-6	OFF	SW3-6	OFF
		SW2-7	OFF		
		SW2-8	OFF		
		SW2-9	ON		
		SW2-10	ON		

These switch settings provide for an interrupt vector address of 210 and a standard Unibus address of 17777440.

TABLE A-4
OPTION SWITCH SETTINGS

Option Sw	Open	Closed	Function
SW1-1	Run	Halt-Reset	Controller Run/Halt-Reset
SW1-2			Not used[1]
SW1-3	Disable	Enable	Header check error to be bad sector
SW1-4	Disable	Enable	Drives to be write-locked on power-up

[1] All unused switches MUST BE OFF.

TABLE A-5
CONFIGURATION SWITCH SETTINGS

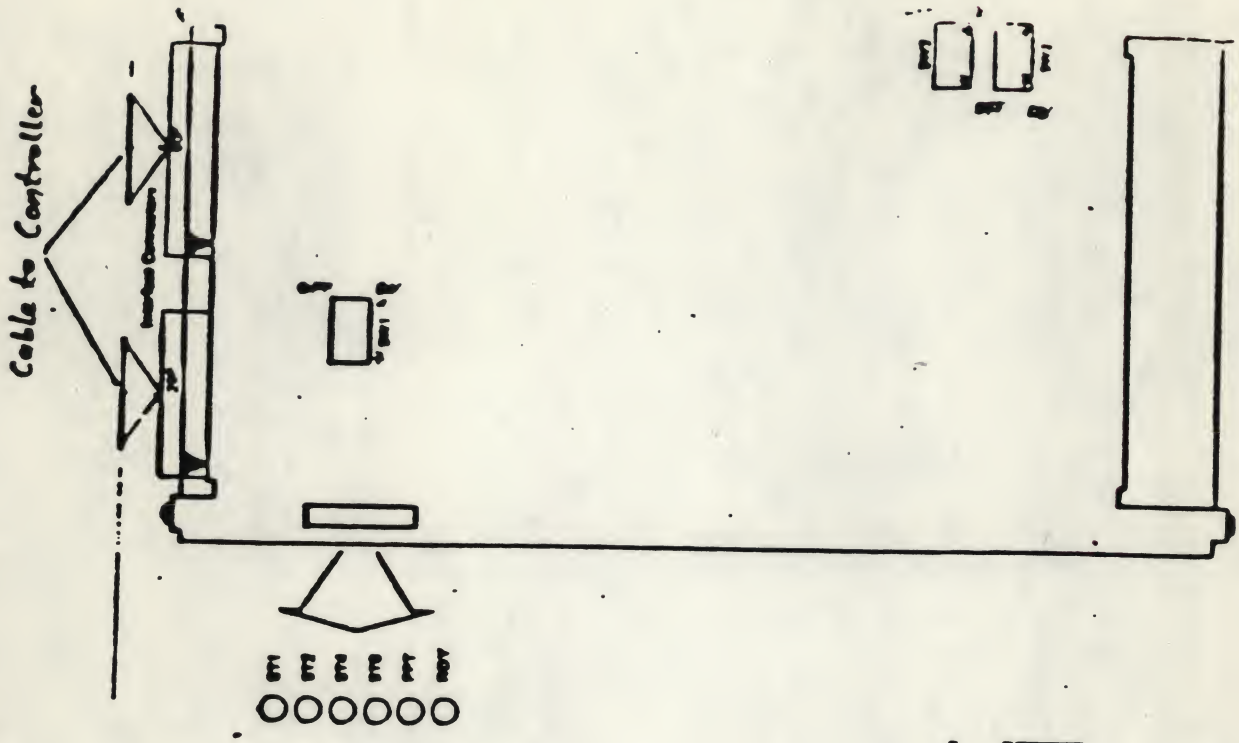
Config Sw	Open	Closed	Function
SW2-1			Drive Configuration[2]
SW2-2			Drive Configuration[2]
SW2-3			Drive Configuration[2]
SW2-4			Drive Configuration[2]
SW2-5			Drive Configuration[2]
SW2-6			Drive Configuration[2]
SW2-7	210	150	Interrupt vector address
SW2-8	Disable	Enable	Head offset capability
SW2-9			Drive Configuration[2]
SW2-10			Drive Configuration[2]

[2]See Table A-2 for settings

TABLE A-6
ADDRESS SWITCH SETTINGS

Address Sw	Open	Closed	Function
SW3-1	3:1	2:1	Sector Interlace
SW3-2		17777440	Standard Unibus Address[3]
SW3-3		17776700	Alternate Unibus Address[3]
SW3-4	Disable	Enable	Boot PROM Option
SW3-5	Disable	Enable	Line Clock Option
SW3-6	Disable	Enable	1k Microcode Address Range (normally open)

[1]All unused switches MUST BE OFF.
[3]Only one address may be selected. All other address switches MUST BE OFF.



Einstelltabelle WD-Drive M2312K (80 MByte)

Controller	PCS-Nr.	SW1 7 6 5 4 3 2 1	SW2 7 6 5 4 3 2 1	SW3 7 6 5 4 3 2 1
Emulex SC02	B 922 409	0 0 0 0 0 0 0	1 0 0 0 1 1 1	0 0 0 0 1 0 0
XyLogics 552	B 922 410	0 0 0 0 0 0 0	1 1 0 1 1 0 0	0 0 0 0 1 0 0
Datacram SO04		0 0 0 0 0 0 0	1 1 1 1 1 1 1	0 0 0 0 1 0 0

0 ≙ OFF
1 ≙ ON

Logische Drive-Nr.

	Tag	Name
Bearb.	24.9.	Grüßer
Gepr.	24.9.	W. Schulz
Norm		

Einstelltabelle M2312K
QU68000 Multi User System

MOISIOC

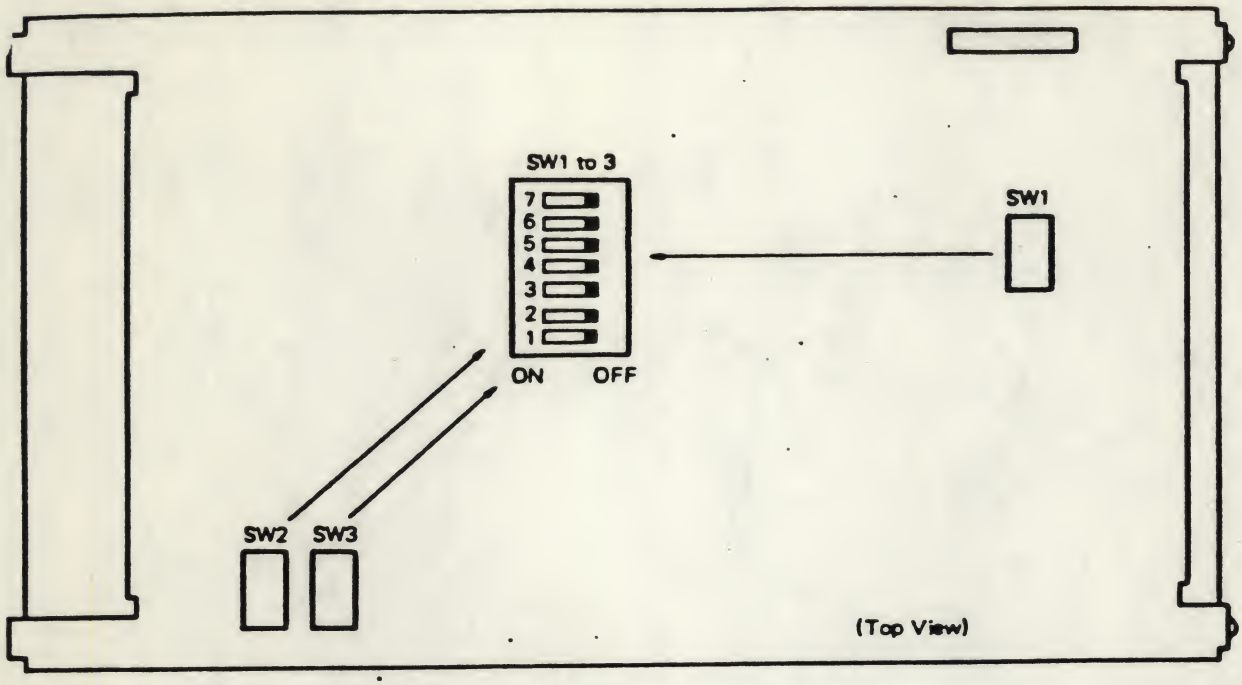


Figure 3-7-1 Mode Select Switch Location

3.7.1 Disk Addressing

Disk Logical Unit Number 0 to 7 is selected by SW1 at location E3 on the CNAM PCB assembly. Set the desired disk address with the three keys on SW1 using the binary code as shown in Table 3-7-1.

Table 3-7-1 Disk Addressing

Disk Address	Key 1	Key 2	Key 3
	2^1	2^2	2^3
0	OFF	OFF	OFF
1	ON	OFF	OFF
2	OFF	ON	OFF
3	ON	ON	OFF
4	OFF	OFF	ON
5	ON	OFF	ON
6	OFF	ON	ON
7	ON	ON	ON

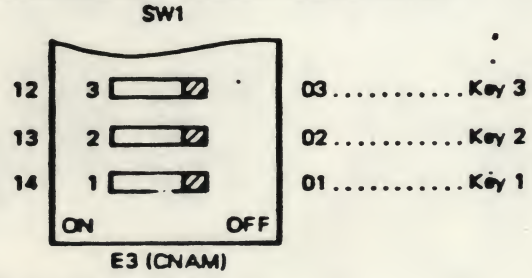


Figure 3-7-2 Disk Addressing

2.3.2 PCB Assembly

The unit contains fault display indicator (LED's) and File-protect switch as shown in Figure 2-3-2.

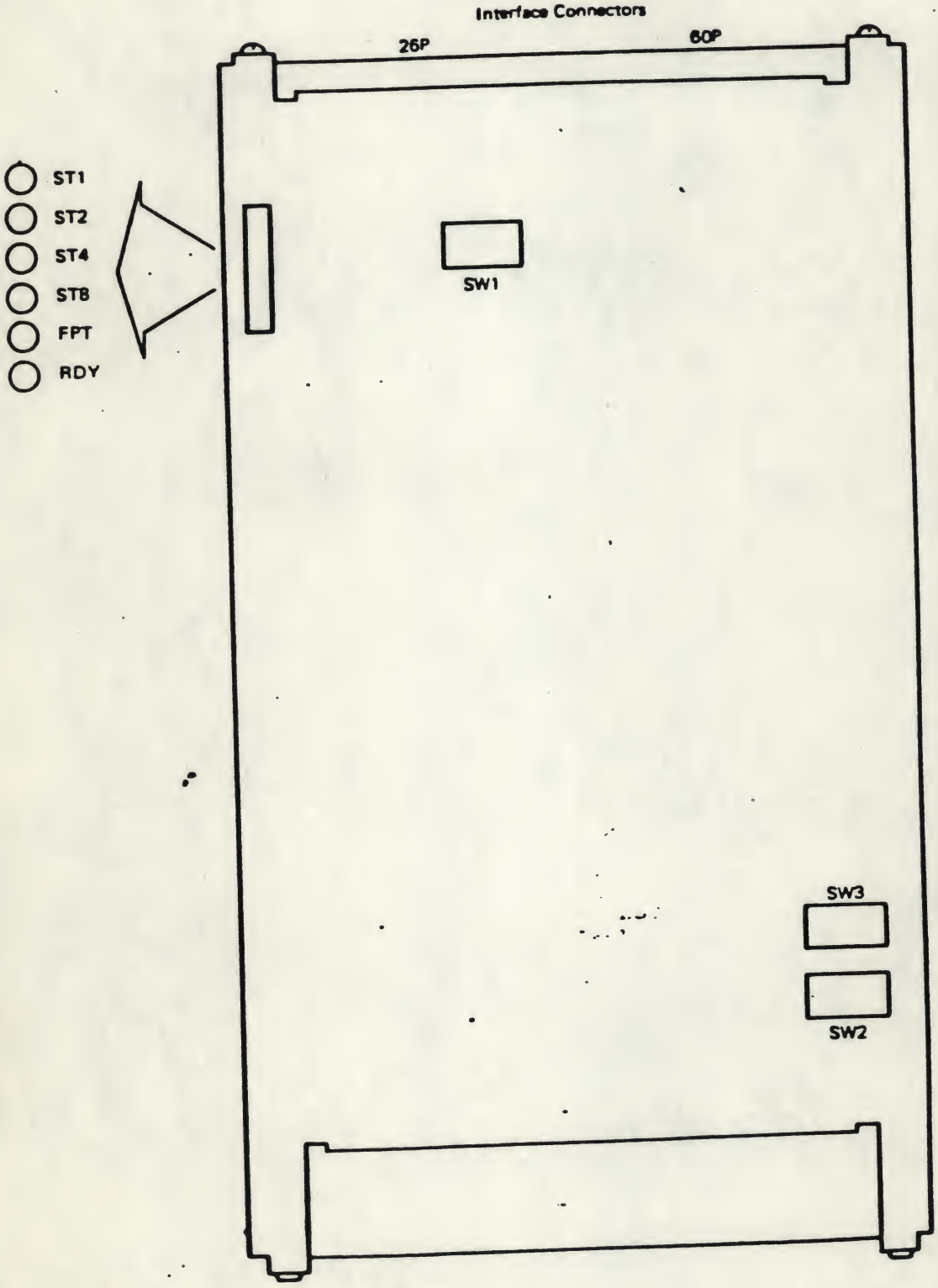


Figure 2-3-2 Fault Display Location

(1) FPT (File Protect) switch: SW1-Key 8
This switch inhibits the write operation. When an optional panel is installed on the drive, the switch should be in the OFF position.

(2) RDY (Ready) indicator: Green
This RDY LED indicates that the initial seek has been performed or indicates the termination of a Seek or RTZ operation.

(3) FPT (File Protect) indicator: Red
This LED indicates that writing is inhibited.

(4) ST1 to ST8 (Status 1 to 8) LEDs: Red
Fifteen fault statuses are visible by binary code as shown in Table 2-3-1.

Table 2-3-1 Fault Indicator

Status Bit				Code (Hex)	Fault Status	
ST8	ST4	ST2	ST1		Fault	Description
0	0	0	1	1	DC motor failure (DMFL)	indicates spindle motor failure.
0	0	1	0	2	VCM over heat (VCMHT)	indicate VCM over-heating.
0	0	1	1	3	Initial seek time out (INTMOT)	indicates initial seek has terminated with time-out.
0	1	0	0	4	Control check 1 (CTCK1)	indicates that a Read/Write command was issued during busy status.
0	1	0	1	5	Control check 2 (CTCK2)	indicates that write gate was issued during a fault condition.
0	1	1	0	6	Read/write check 1 (RWCK1)	indicates that write gate was issued during off-track.
0	1	1	1	7	Read/write check 2 (RWCK2)	indicates that write current did not flow to the head during a Write operation.
1	0	0	0	8	Read/write check 3 (RWCK3)	indicates that write gate was issued during File-Protected status.
1	0	0	1	9	Read/write check 4 (RWCK4)	indicates that write gate was issued during a multi-head-selected status.
1	0	1	0	A	Time-out (TMOT)	indicates that seek or RTZ sequence was not terminated within 500 ms.
1	0	1	1	B	Seek guard band (SEKGB)	indicates that a guard band was detected during a direct seek operation.
1	1	0	0	C	Linear mode guard band (LNMGB)	indicates that a guard band was detected during a linear mode.
1	1	0	1	D	RTZ outer guard band (RTOGB)	indicates that an outer guard band was detected during an RTZ operation.
1	1	1	0	E	Over-shoot check (OVSHT)	indicates that the head overshoot the new cylinder address during settling time.
1	1	1	1	F	Illegal cylinder check (ILCYL)	indicates that an illegal cylinder address (>588) was issued by the controller.

2.4 POWER SUPPLY

The optional power supply may be provided with the M231XK. The front view of the power supply is shown in Figure 2-4-1.

2.4.1 Main Line Switch

This switch controls application of site AC power to the power supply. Turning on the switch applies power to an optional fan unit and DC Power to the disk drive.

2.4.2 Indicators (LEDs)

(1) Power On LED

The Power On LED indicates that AC input is applied to the power supply.

(2) Power Alarm LED

The power alarm indicates the following mulfunction has occurred on the power supply:

- +5 VDC: Over-current, Over-voltage and Non-voltage
- −12 VDC: Over-current and Non-voltage
- +24 VDC: Over-current and Non-voltage
- Over heat within the power supply
- AC Output to the fan: Over-current

2.4.3 Device Alarm

The Device Alarm indicates that the terminal switch has be closed on an optional fan.

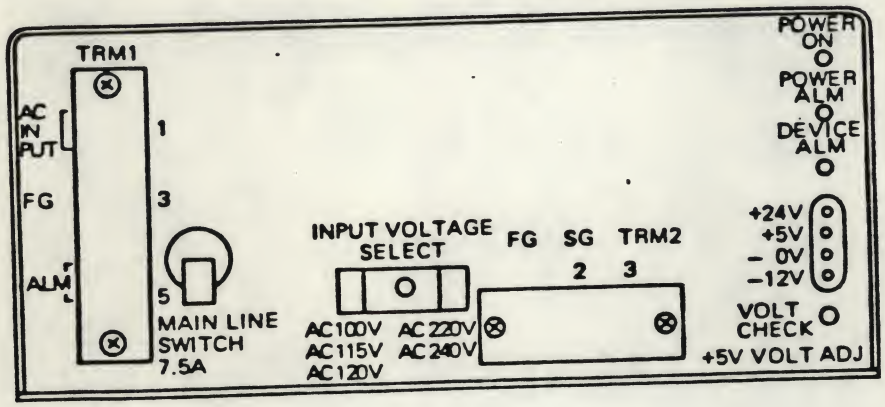


Figure 2-4-1 Front View of Power Supply

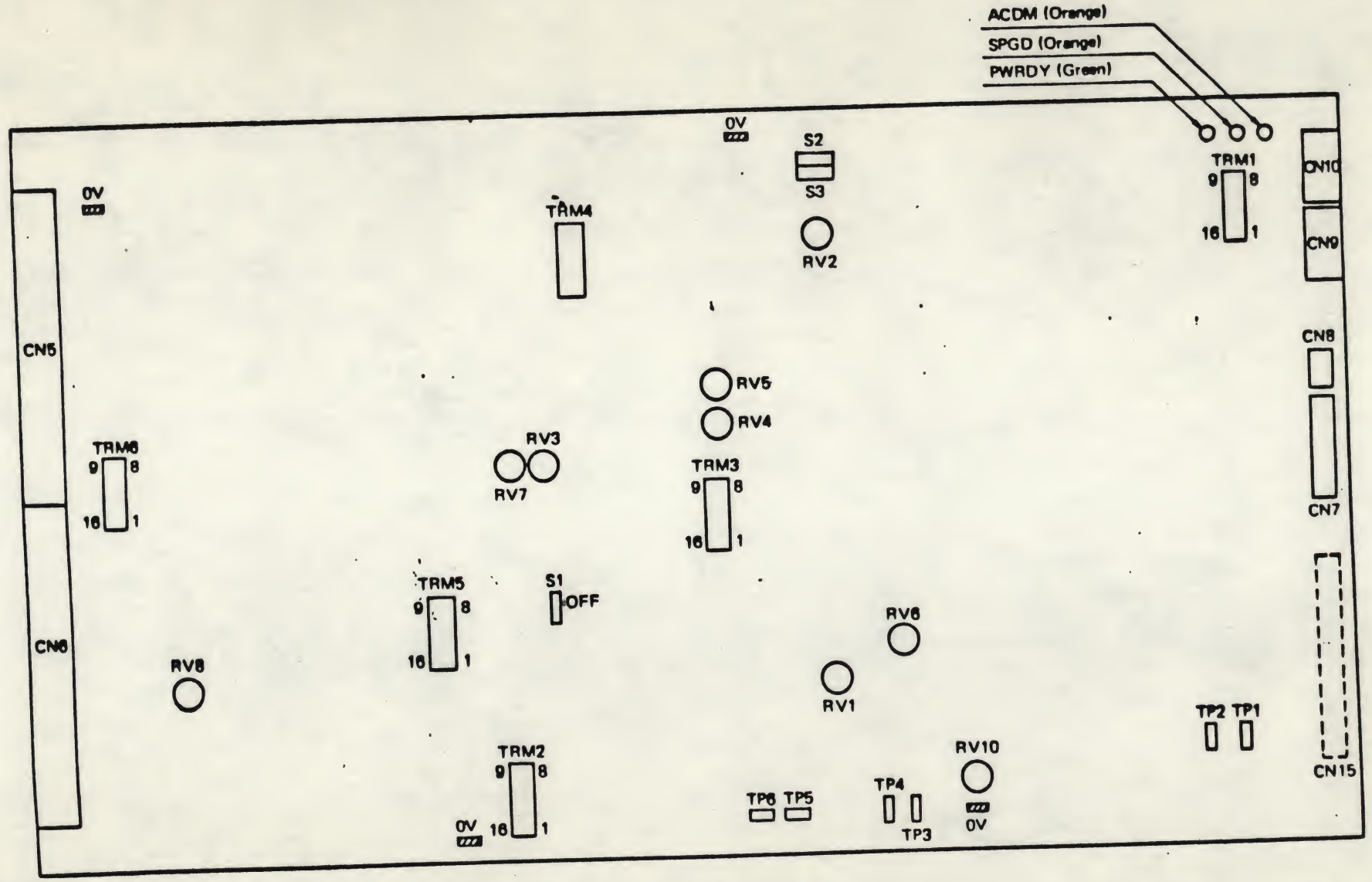


Figure 6-6-2 CMZM PCB Assembly Test Points

Table 6-6-3 CNAM Potentiometer Function

Pot. No.	Function/Adjustment	Reference TP
RV1	VFO Free-run Frequency	CH2/TRM9-13
2	Time-margin Measurement	CH1/CH3
3	Reference Pulse Width Adjustment	TRM10-9
4	Settling 1 (2.5 ms)	CH6

Note: No adjustment is required on any potentiometer when the CNAM PCB is replaced.

Table 6-6-4 CNAM Switch Function

No.	Function	Reference TP
SW1	Disk Addressing Device Type (when Tag 4/5 enabled) Tag 4/5 Enable Hard/Soft Sector mode File Protect	None
SW2 SW3	Sector Counting	TP23/TP24
TRM1 TRM2	Busy signal terminator	None
TRM3 TRM4	VCO (VFO) select	CH2/TRM9-13

(2) CMZM PCB assembly

The test points and potentiometers located on the CMZM PCB assembly are shown in Figure 6-6-2. Test points are listed in Table 6-6-5, potentiometers in Table 6-6-6 switches in Table 6-6-7. Three LEDs are located on the CMZM PCB assembly as follows:

ACDM (Orange): indicates that accelerate mode is activated.

SPGD (Orange): indicates that the rotational speed is within ±6% of the nominal value.

PWRDY (Green): indicates that +5 V, −12 V, +24 V and internal +12 V are within the nominal voltage.

Änderungen V1.41Ø3 → V1.41Ø4

V1.41Ø4 wird nur an Siemens ausgeliefert.

"Highlights":

1) sl.c, Treiber für die seriellen Schnittstellen auf dem Multi-Function-Board (MFB) wird eingebunden.
2) Das MFB enthält auch eine Kanalschnittstelle → Kernänderungen werden nötig, da jetzt 2 Kanalsteuerungen unter Minix existieren.

Die Minix-Systeme f. Siemens haben nur 256 KByte Hauptspeicher, die sich nur durch das Ein- und Ausladen der Programme und damit zu Geschwindigkeitsverlust. Verbesserung durch:

3) geänderte Hauptspeicherverwaltung Prozeß erhält mehr Hauptspeicher als er anfordert → Bei der nächsten Anforderung muß er nicht wieder ausgelagert werden, sondern besitzt den Hauptspeicher bereits.

→ Das Swappen wird vermieden.

(1) /usr/include/sys/param.h wird "geschrumpft". Die Konstanten wurden verkleinert → das gemeinsame Unix wird kleiner → weniger Hauptspeicher wird permanent durch das Unix belegt.
Bsp.: Anzahl Puffer im Pufferpool: 20 statt 30.

Allerdings: "param.small" eignet sich nicht für ein universelles Multiuserssystem.

Im Detail:

/usr/sys/dev:

sl.c — f. 8 Schnittstellen, slputchar, slgetchar für die Konsole

kl.c — Änderung: klputchar, klgetchar Auswahl welches putchar, getchar in /usr/sys/sys/prf.c, f. 9 Schnittstellen (nicht)

otloops.s /ot.c — letzter MOVEM-Befehl in einer MOVE-Befehle aufgelöst, HW-Gründe

tm.c — Konstante für RETRIES berichtigt

makefile — sl.o in lib2
ot.o wird zu ot503.o oder ot603.o
→ in libdevice, statt lib2
(TANDON 503 und 603 sind im Feld)

/usr/sys/sys:

prf.c — putchar, getchar angepaßt
Feststellung welche Konsole existiert:
1. Ansprechen der DL11j mit fsword
2. Erg. -1 ⇒ slu ist Konsole sein.

sys1.c — sbreak holt 6K auf einmal, statt der angeforderten Menge.

main.c — neue Ausgabe ...V1.4104...

mch.s — Ausgaben auf Konsole auskommentiert

Kernel:

c.c sl-Treiber neu: major nr.: 24

l.s neue Konstanten:

SLU: 4 slu Schnittstellen (einschl. Konsole)

SLU8: 4 weitere slu Schnittstellen (von HW Seite noch nicht ok)

SLDL2: 4 weitere DLV11j Schnittstellen, nur wenn SLU = 1 !!
DLV11j Karte mit Interrupt-vektor 340 - 370 .... einstellen.

Die Konstante DL2 bedeutet dagegen 2 DLV11j Karten, auf der 2. ist die Konsole verdrahtet: 340, 350, 360, 60.
1. DLV11j hat 4 normale Hy SS: 300 - 330.

confinfo, name.c } update

conf.all einschließlich slu

lib1.big / ..small
lib2.big / "
libdhoice.big / "
lib3.big / "

} 2 libraries parallel:
• small: alles mit param.small übersetzt
• big: ...param.big... → normale Größe

außerdem muß rauhlib bei den libs verwendet werden!

libchoice.. enthält zusätzlich
ot503.0 , ot603.0

lib?.... , conf.modul haben ot503.0

makefile 2 Zweige:
unix.sm alles . small
unix.bg alles . big

unix.sm wird bei den
Siemens-Nixi-Systemen
verwendet (conf.small)
unix.bg ist normal
(z.B. conf.big)

/usr/include/sys:

param.small Unterschiede siehe
param.big Anlage ① diff....

/etc:

newconf { Abfrage für unix.sm oder unix.bg
neue Abfragen für l.s,
Abfrage für unix.sm oder unix.bg

whatconf ergänzt, lbp-Fehler beseitigt,
kl wird immer angegeben,
auch wenn es nicht gebraucht
wird! (Konnte nicht verhindern,
daß Kl.o mitgebunden wird)

Hys, Hystype neue Zeilen für Hy50
(Konsole) - Hy57

/dev:

makefile ergänzt, umgestellt
Hy50 (slu-Konsole) muß genauso
wie Hy0 (DLV11j-Konsole)
vorab existieren.

/sa:

otformat, vtformat verbessert
alle Programme können
jetzt mit beiden Konsolentypen arbeiten.
Siemens enthält auch memtst, t68030, ottest

/aunix slu als Konsole möglich

/usr/man/man4:

ot.4

/usr/man/man7:

iopage.7

/usr/doc/pcs/setup:

floppy-ot

(1) diffs param.small param.big

sm
```
                NBUF    24
                NHBUF   32
                NINODE  50
                NFILE   80
                NMOUNT  5
```

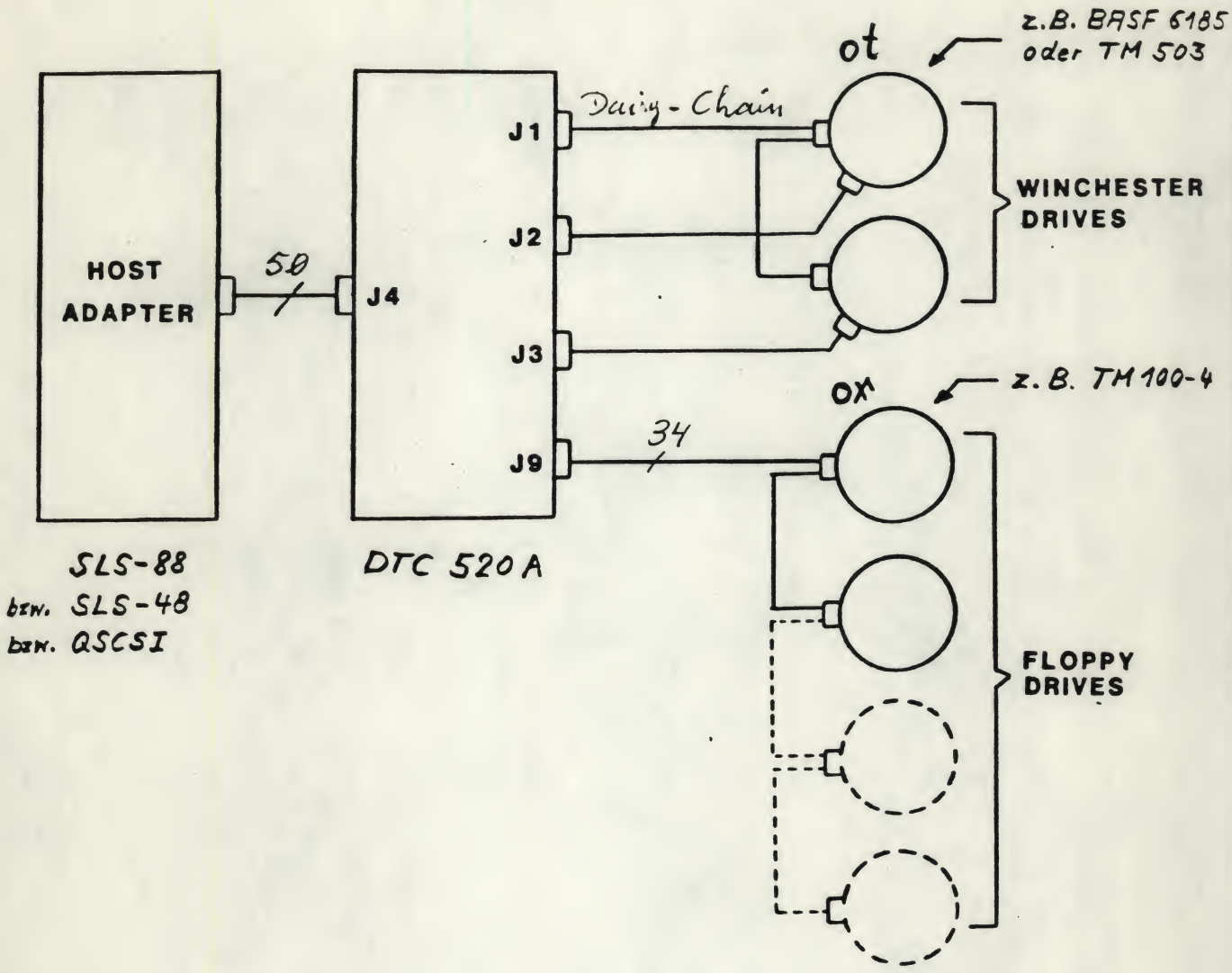
bg
```
                NBUF    30          /* size of buffer cache */
                NHBUF   64          /* must be power of two */
                NINODE  100         /* number of in core inodes */
                NFILE   100         /* number of in core file structures */
                NMOUNT  20          /* number of mountable file system */
```

sm
```
                CMAPSIZ 40          /* size of core allocation area */
                SMAPSIZ 40          /* size of swap allocation area */
```

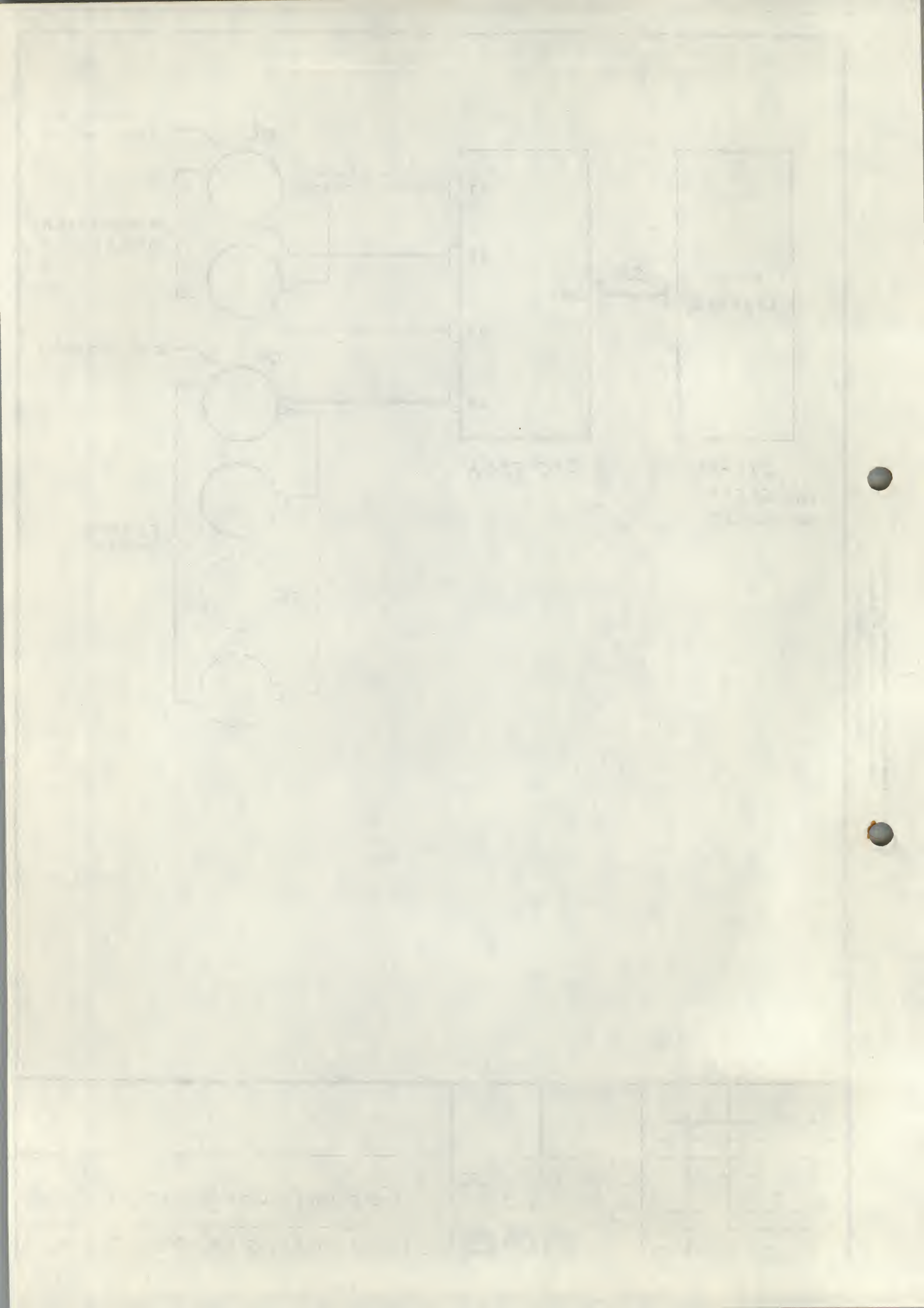
bg
```
                CMAPSIZ 50          /* size of core allocation area */
                SMAPSIZ 50          /* size of swap allocation area */
```

sm
```
                NPROC   40          /* max number of processes */
                NTEXT   20          /* max number of pure texts */
                NCLIST  100         /* max total clist size */
```

bg
```
                NPROC   100         /* max number of processes */
                NTEXT   60          /* max number of pure texts */
                NCLIST  200         /* max total clist size */
```

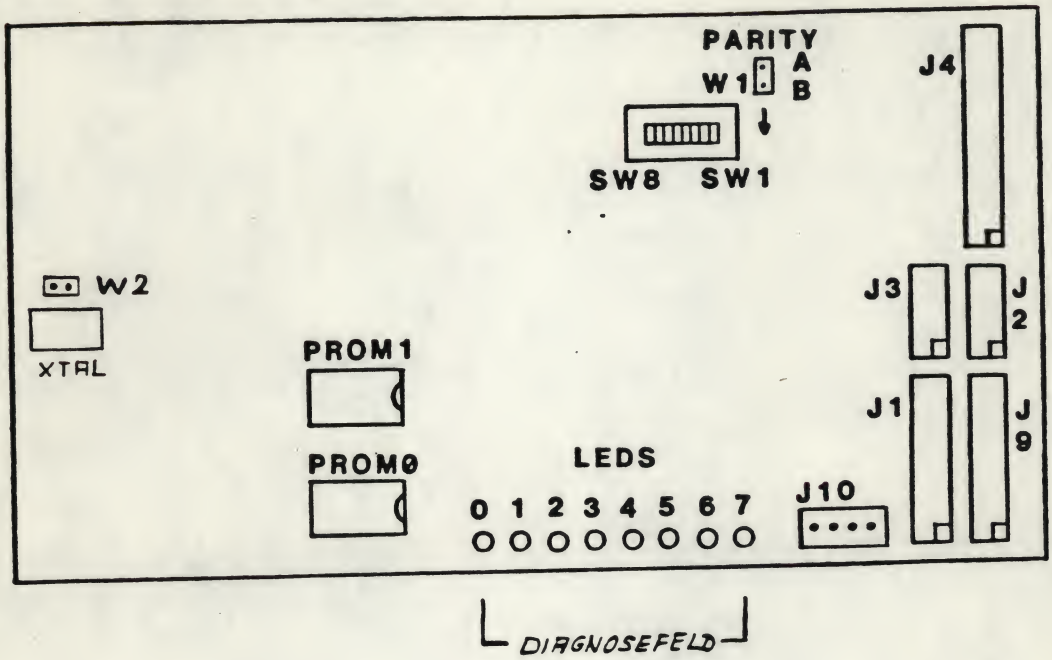


Freimaßtoleranzen				
	BJ	Tag	Name	Maßstab
	Bearb	7.10.	W Schulte	Gesamtkonfiguration
	Gepr	9.10.	Z. Zi.	
	Norm			DTC 520A / SLS 88 / QSCSI 1/



Seperate Karte

DTC-520 A



J1....WINCHESTER CONTROL CABLE

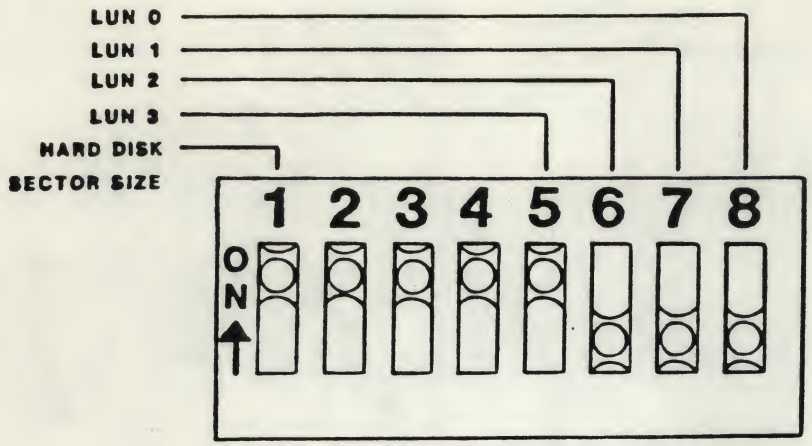
J2,J3....WINCHESTER READ/WRITE CABLES

J4....HOST BUS CABLE (SCSI-ADAPTER)

J9....FLOPPY CONTROL CABLE

J10....POWER CONNECTOR

Freimaßtoleranzen				
	83	Tag	Name	Maßstab
	Bearb	7.12	W. Seiz	Boardansicht
	Gepr	10.11.	Kelly	
	Norm			DTC 520 A 2/



SWITCH	DRIVE TYPE SELECT	ON	OFF
8	LUN 0	HARD DISK	FLOPPY DISK
7	LUN 1	HARD DISK	FLOPPY DISK
6	LUN 2	ILLEGAL	FLOPPY DISK
5	LUN 3	ILLEGAL	FLOPPY DISK
4	NOT USED		
3	NOT USED		
2	HARD DISK SECTOR SIZE		
1			

Standard:

2,7 und 8
auf -ON-

SWITCH 1	SWITCH 2	
ON	ON	256 bytes per Sector and 33 Sectors per Track
OFF	ON	512 bytes per Sector and 18 Sectors per Track
ON	OFF	1,024 bytes per Sector and 8 Sectors per Track
OFF	OFF	Undefined

NOTE: LUN 2 & 3 CAN ONLY BE ASSIGNED AS FLOPPY DRIVES.

W1 - Removed
W2 - Installed

Freimaßtoleranzen			
83	Tag	Name	Maßstab
Bearb	7.10	W. Schulte	
Gepr	" 11.	[illegible]	Scholter - und Brückeneinst.
° ,mm			
ACB			DTC 520 A · 3

5. Konfiguration

Die Konfiguration des SLS-88-Boards erfolgt im Wesentlichen ueber einen 10-fach DIL-Schalter. Interrupt-Level- und Interrupt-Vektor-Einstellung geht ueber Bruecken.

5.1 Konfigurationsschalter

Position (1) im Bestueckungsplan (Anhang) zeigt den Konfigurationsschalter. Zum Schutz gegen Verstellung beim Einstecken bzw. Herausziehen der Platine besitzt der Schalter ein Fenster. Im folgenden sind die moeglichen Einstellungen beschrieben.

Einstellung der Systemkonsole

S1:	S1=OFF	=>	1 STOP-BITS	*
	S1=ON	=>	2 STOP-BIT	
S2:	S2=OFF	=>	8 BIT/CHAR	*
	S2=ON	=>	7 BIT/CHAR	

S3, S4:	S3=OFF	S4=OFF	=>	9600 Baud	*
	S3=ON	S4=OFF	=>	300 Baud	
	S3=OFF	S4=ON	=>	1200 Baud	
	S3=ON	S4=ON	=>	110 Baud	

Einstellung der Adressen

- SLU-Adresse

S5:	S5 = OFF	=>	$FFFC00 - $FFFCFF	*
	S5 = ON	=>	$FFFD00 - $FFFDFF	

- SCSI - Adapter - Adressen

S6:	S6 = OFF	=>	$FFFB80 - $FFFBBF	*
	S6 = ON	=>	$FFFBC0 - $FFFBFF	

S7: nicht verwendet!

LED_ERROR_DISPLAY

The following error codes are displayed on the LEDs on the controller in conjunction with any error condition on the controller indicated by the Error bit in the Completion Status Byte. The LED's are cleared upon receiving the next command.

Error Code (HEX)	Interpretation
00	No Error
01	No Index from drive
02	No Track 00 from drive
03	Sector Address Out of Bounds
04	Winchester disk not selected
05	No Seek Complete from Winchester disk
06	No ID Address Mark
07	No Data Address Mark
08	Seek Error (Cylinder or Head not correct)
09	Sector not found
0A	ID ECC error
0B	Not used
0C	Invalid Command
0D	Incorrect DATA MARK
0E	Incorrect ID MARK
0F	Incorrect cylinder address from drive
10	Incorrect sector address from drive
11	Incorrect head address from drive
12	Uncorrectable Data Error
13	Correctable Data Error
14	Drive not READY
15	Write fault
16	not used
17	Drive write protected
18	RAM diagnostic error
19 1F	not used
1F	Unable to read the Alternate Track Address
20	Parity Error from host adaptor. If this error occurs, the host adaptor has a fault in the parity generation circuitry.
21	Bad Block detected from drive
22	Invalid function for this drive type
31	Attempted to directly access an alternate Track
32	Seek in progress
33	Volume overflow
81	Multiple Winchester disks selected. Fatal error.
82	Sequencer time-out during disk or Host transfer.

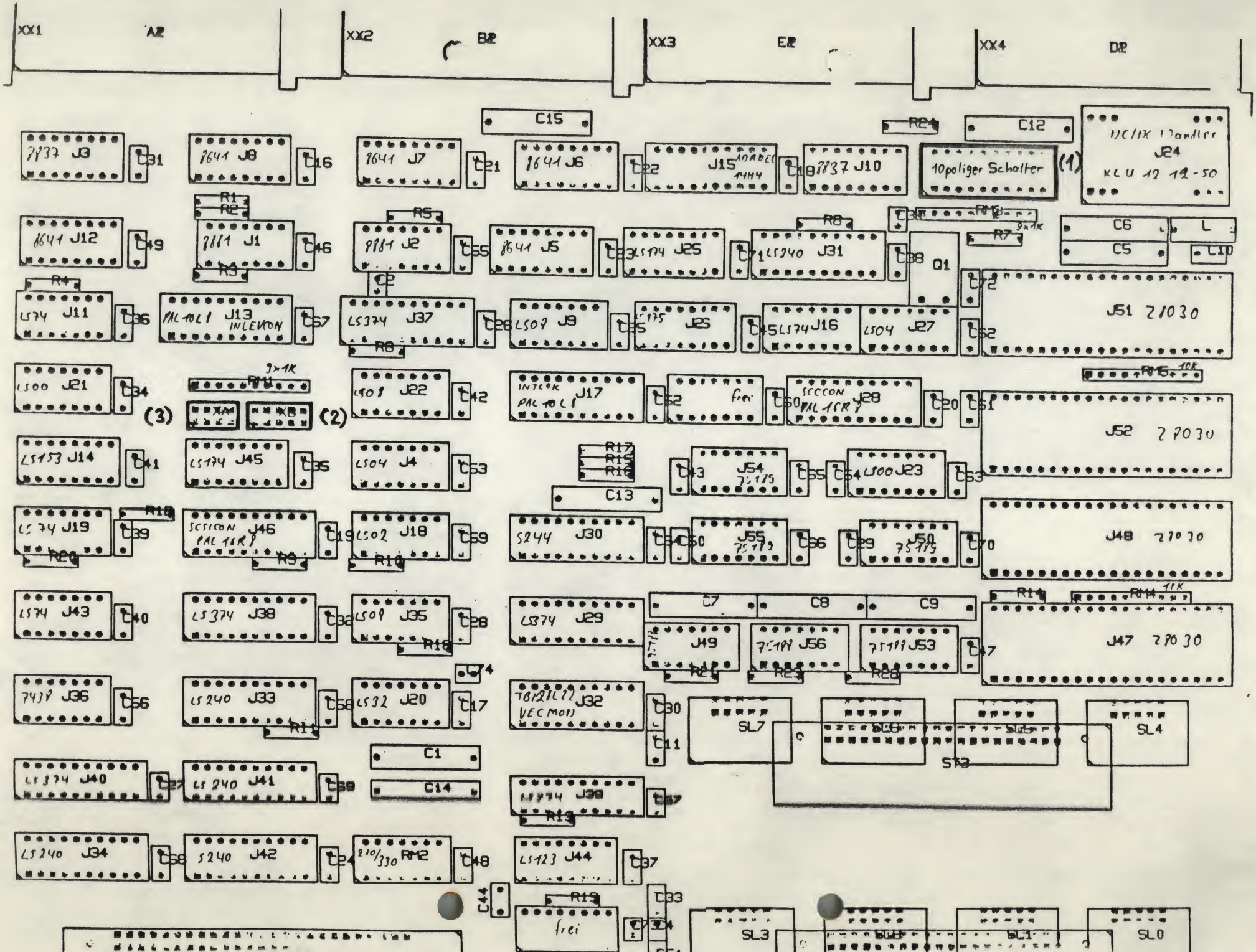
LED_CONTROLLER_STATE_INDICATION

The following LED codes are also displayed to indicate the state of the controller.

40	Controller Idling
C0	Controller is Selected

Freimaßtoleranzen				
83	Tag	Name	LED - Fehler - Diagnose	Maßstab
Bearb	7.10.	W. Schmelke		
Gepr	1.10.	J. Stein		
Norm			DTC 520 A	4

ACB


XX1
A2
XX2
B2
XX3
E2
XX4
D2
C15
R24
C12
J3
J8
J7
J6
J15
J10
10poliger Schalter
(1)
J24
KLU 12 12-50
J12
J1
J2
J5
J25
J31
Q1
C6
C5
J51 27030
J11
J13
J37
J9
J16
J27
J21
(3)
(2)
J22
J17
J28
J52 27030
J14
J45
J4
J54
J23
C13
J19
J46
J18
J30
J55
J50
J48 27030
J43
J38
J35
J29
J49
J56
J53
J47 27030
J36
J33
J20
J32
SL7
SL4
SL3
J40
J41
J39
J34
J42
J44
frei
SL0

Disable fuer SCSI-Adapter und Modem

S8:	S8 = OFF	=>	SCSI-Adapter enabled •
	S8 = ON	=>	SCSI-Adapter disabled
S9,S0:	S9 = S0 = OFF	=>	Modem enabled Kanal 8 •
	S9 = S0 = ON	=>	Modem disabled (gilt nur fuer Kanal 7 bzw. Kanal 15)

ACHTUNG: S9,S0 muessen die gleiche Stellung haben!

• Standardeinstellung (alle Schalter auf "OFF")

5.2 Brueckeneinstellung

Position (2) und (3) des Bestueckungsplans zeigen Bruecken zur Einstellung von Interrupt-Vektor und -Level. Layoutmaessig sind bereits Brueckungen vorgenommen worden. Wenn moeglich sollte diese standardmaessige Einstellung nicht veraendert werden. Falls eine Aenderung unumgaenglich ist, sollte man sich ueber die Konsequenzen im Klaren sein.

5.2.1 Einstellung des Interrupt-Vektors

Ueber 5 Bruecken kann der Interruptvektor des SCSI-Adapters eingestellt werden.

V3 V4 V5 V6 V7

Eine eingelegte Bruecke bedeutet eine "0". Durch Layoutbruecken bei V6 und V5 ist der Standardvektor 230 (OKTAL) eingestellt. Es wird empfohlen, den Vektor beizubehalten.

Die Einstellung der SLU-Interruptvektoren erfolgt durch entsprechende Programmierung der SCC-Bausteine.
Um die weiter oben beschriebenen Vektoren (Kapitel 4.1) zu generieren, muss in das Vektor-Register des jeweiligen Z8030 folgendes geschrieben werden:

Bit 7 : "1"
Bit 6 : B6 = 0 bei Board 1 (Kanal 0 - 7)
B6 = 1 bei Board 2 (Kanal 8 -15)

Bit 5,4:	B5 = 0, B4 = 0	bei Kanal 0,1 (8, 9)
	B5 = 0, B4 = 1	bei Kanal 2,3 (10,11)
	B5 = 1, B4 = 0	bei Kanal 4,5 (12,13)
	B5 = 1, B4 = 1	bei Kanal 6,7 (14,15)

Bit 3-0: Keine Bedeutung

5.2.2 Einstellung der Interrupt-Level

Ueber 4 Bruecken ((3) im Bestueckungsplan) lassen sich die Interrupt-Level fuer SLU und SCSI einstellen

SL1 SL0 WF1 WF0

Interrupt-Level SLU

SL1 = OFF SL0 = OFF => I-LEVEL = 7
SL1 = OFF SL0 = ON => I-LEVEL = 6
SL1 = ON SL0 = OFF => I-LEVEL = 5
SL1 = ON SL0 = ON => I-LEVEL = 4

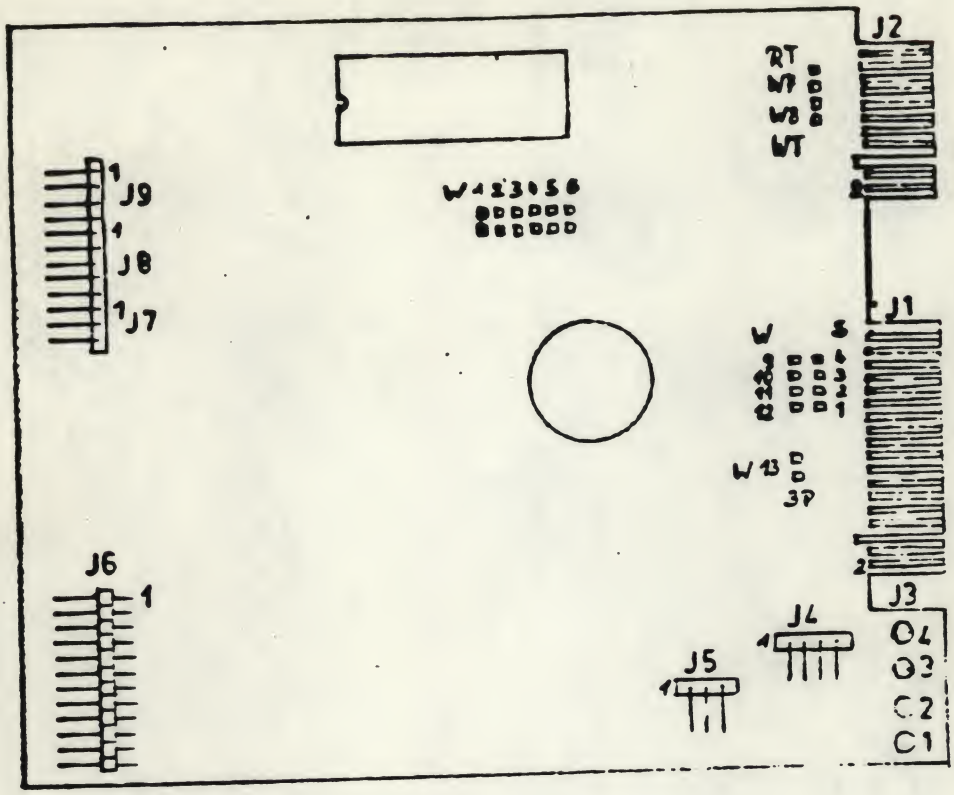
Interrupt-Level SCSI

WF1 = OFF WF0 = OFF => I-LEVEL = 7
WF1 = OFF WF0 = ON => I-LEVEL = 6
WF1 = ON WF0 = OFF => I-LEVEL = 5
WF1 = ON WF0 = ON => I-LEVEL = 4

Layoutmaessig ist hier ein Interrupt-Level von '4' fuer die SLU und ein Interrupt-Level '5' fuer den SCSI-Adapter vorgesehen.

Achtung:

Unabhaengig von dieser Einstellung hat auf dem Board der SCSI-Interrupt Vorrang vor einem Interrupt der SLU.



Brücke	Controller DTC 520 Drive Ø	Drive 1	
W1			Track Fault
W2			Test
W3			Disable Limit
W4			Spin Select
W5			Tracks
W6			Motor Type
RTW7	—		Read Terminator
WTW8	—		Write Terminator
S4W9			Drive Select 4
S3W10			" " 3
S2W11		—	" " 2
S1W12	—		" " 1
3PW13	—	—	Three Disk

Zeichenerklarung: installed — removed

Ausgabe	Änderung	Tag	Name

Freimaßtoleranzen

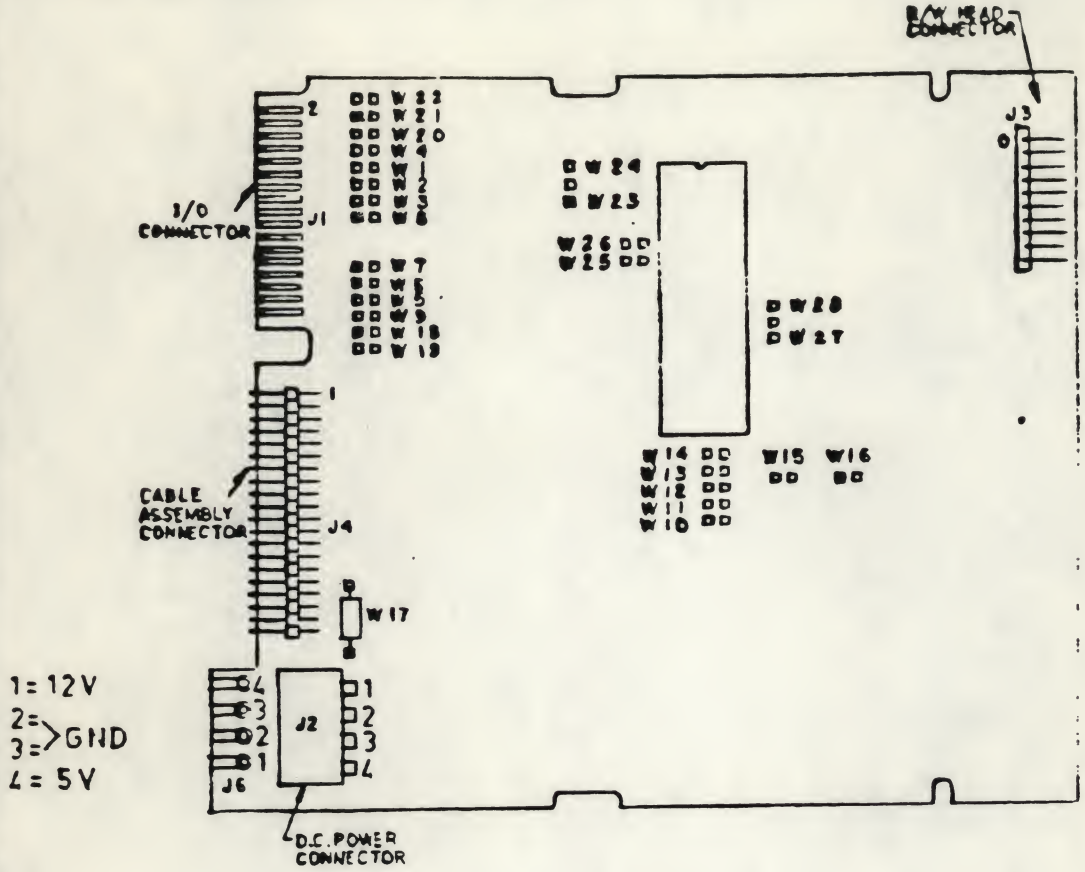
	Tag	Name
Bearb	7-12	Rff. tf
Gepr	"	
Norm		

DCS DIGITAL COMPUTER SYSTEME

DRIVE EINSTELLTABELLE
TM 503 mit DTC 520 Controller

Maßstab

B 923.009



Brücke	Controller DTC 520 Drive Ø	Drive 1		Brücke	Controller DTC 520 Drive Ø	Drive 1
W 1			Drive Select	W14		
W2			"	W15		
W3	—		"	W16	—	—
W4		—	SIEHE MANUAL	W17	—	—
W6				W20		
W15				W21		
				W22		
W 9			Ready I/O	W23	—	—
W19	—	—	"	W24		
W 5	—	—		W25	—	—
W 6	—	—		W26		
W 7				W27		
W 10				W28	—	—
W 11	—	—				
W 12						
W 13						

Zeichenerklärung: installed — removed

Ausgabe	Änderung	Tag	Name

Freimaßtoleranzen

	Tag	Name
Board	6-12	
Gepr.		
Norm		

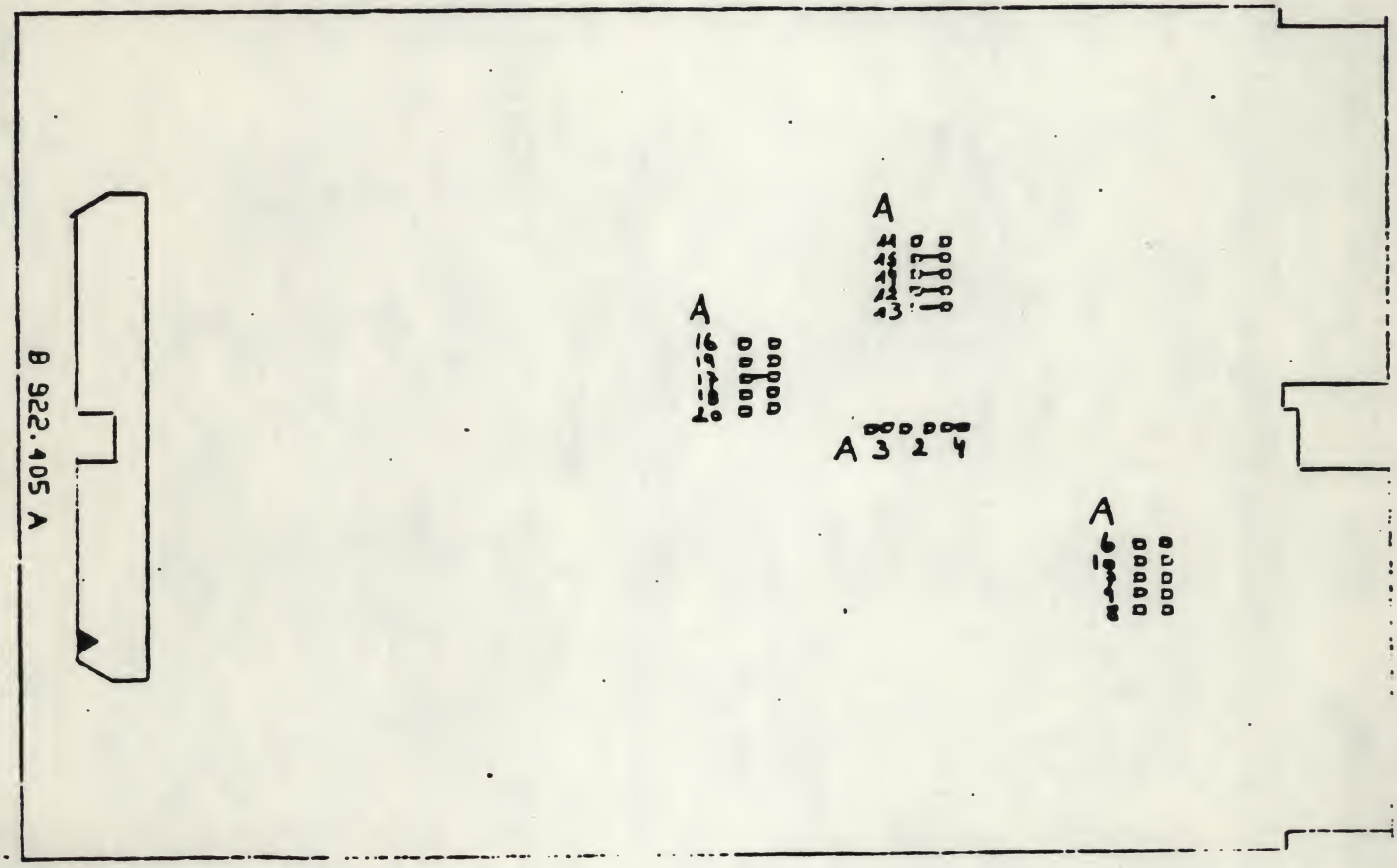
DCB PERIPHERIC & COMPUTER SYSTEME

DRIVE EINSTELLTABELLE
TM 101-4 mit DTC 520 Controller

Maßstab

B 923.008

3.1 STANDARDEINSTELLUNG STREAMER



Brueckeneinstellung ab Werk:

A 1 = nicht
A 2 = ver
A 3 = aendern !
A 4 =

A16 = VEKTORBIT 7 : out
A17 = VEKTORBIT 6 : in
A18 = VEKTORBIT 5 : out
A19 = VEKTORBIT 4 : out
A20 = VEKTORBIT 3 : out

A 6 = ADRESSBIT 12 : out
A 7 = ADRESSBIT 11 : out
A 8 = ADRESSBIT 10 : out
A 9 = ADRESSBIT 9 : out
A10 = ADRESSBIT 8 : out
A11 = ADRESSBIT 7 : out
A12 = ADRESSBIT 6 : in
A13 = ADRESSBIT 5 : in
A14 = ADRESSBIT 4 : in
A15 = ADRESSBIT 3 : in

DSG101 - Med

Exit	^Z
save to Disk	^D
-Tab	Linefeed
Refresh	^X
ChTab	^T
ChWin	^C
Left	^L
Right	^R
Window	^W
Control char	^\
Macrofunction	^F

<table>
<tr><td>Home</td><td>+Page</td><td>+Line</td><td>+Srch</td></tr>
<tr><td>Goto</td><td>-Page</td><td>-Line</td><td>-Srch</td></tr>
<tr><td>Pick</td><td>Open</td><td>Do</td><td>Use</td></tr>
<tr><td>Put</td><td>Close</td><td>Restor</td><td rowspan="2">Enter</td></tr>
<tr><td colspan="2">Delete Char</td><td>Insert</td></tr>
</table>

TeleVideo - Med

F1	F2	F3	F4	F5
Exit	Save	WinLeft	WinRight	Refresh

-Tab Linefeed
Control char ^\

Home	Insert	Window		Refresh
Goto	Macro	ChWin	Restore	
Tab	+Page	+Line	+Srch	Pick
	-Page	-Line	-Srch	Put
ChTab	Do	Use	Open	Enter
Delch			Close	

NAME

boot – startup procedures

DESCRIPTION

A PDP11/45 and PDP11/70 UNIX system is started by a two-stage process. The first is a primary bootstrap which is able to read in relatively small stand-alone programs; the second (called *boot*) is used to read in the system itself.

The primary bootstrap must reside in the otherwise unused block zero of the boot device. It can be read in and started by the standard ROM programs, or if necessary by keying in a small startup routine. This program is capable of loading type 407 executable files (not shared, not separate I&D). The user types on the system console the name of the program wished, in this case *boot*, followed by a carriage return; the named program is retrieved from the file system that starts at block 0 of drive 0 of the boot device. No prompt is given, no diagnostic results if the file cannot be found, and no provision is made for correcting typographical errors.

The second step, called *boot*, actually brings in the system. When read into location 0 and executed, *boot* sets up memory management, relocates itself into high memory, and types a ':' on the console. Then it reads from the console a device specification (see below) followed immediately by a pathname. *Boot* finds the corresponding file on the given device, loads that file into memory location zero, sets up memory management as required, and calls the program by executing a 'trap' instruction. Normal line editing characters can be used.

Conventionally, the name of the secondary boot program is '/boot' and the name of the current version of the system is '/unix'. Then, the recipe is:

1) Load block 0 of the boot device by fiddling with the console keys as appropriate for your hardware. If you have no appropriate ROM, some programs suitable for manual use are given below.

2) Type *boot*.

3) When the prompt is given, type

```
hp(0,0)unix
```

or

```
rp(0,0)unix
```

depending on whether you are loading from an RP04/5/6 or an RP03 respectively. The first 0 indicates the physical unit number; the second indicates the block number of the beginning of the logical file system to be searched. (See below).

When the system is running, it types a '#' prompt. After doing any file system checks and setting the date (*date*(8)) a multi-user system is brought up by typing an EOT (control-d) in response to the '#' prompt.

Device specifications. A device specification has the following form:

```
device(unit,offset)
```

where *device* is the type of the device to be searched, *unit* is the unit number of the device, and *offset* is the block offset of the file system on the device. *Device* is one of the following

rp	RP03
hp	RP04/5/6
rk	RK05

For example, the specification

```
hp(1,7000)
```

indicates an RP03 disk, unit 1, and the file system found starting at block 7000 (cylinder 35).

NAME

badsect – create files to contain bad sectors

SYNOPSIS

/etc/badsect sector ...

DESCRIPTION

Badsect makes a file to contain a bad sector. Normally, bad sectors are made inaccessible by the standard formatter, which provides a forwarding table for bad sectors to the driver; see *bad144*(8) for details. If a driver supports the bad blocking standard it is much preferable to use that method to isolate bad blocks, since the bad block forwarding makes the pack appear perfect, and such packs can then be copied with *dd*(8). The technique used by this program is also less general than bad block forwarding, as *badsect* can't make amends for bad blocks in the i-list of file systems or in swap areas.

Adding a sector which is suddenly bad to the bad sector table currently requires the running of the standard DEC formatter, as UNIX does not supply formatters. Thus to deal with a newly bad block or on disks where the drivers do not support the bad-blocking standard *badsect* may be used to good effect.

Badsect is used on a quiet file system in the following way: First mount the file system, and change to its root directory. Make a directory BAD there and change into it. Run badsect giving as argument all the bad sectors you wish to add. (The sector numbers should be relative to the beginning of the file system, but this is not hard to do as the system reports relative sector numbers in its console error messages.) Then change back to the root directory, unmount the file system and run *fsck*(8) on the file system. The bad sectors should show up in two files or in the bad sector files and the free list. Have *fsck* remove files containing the offending bad sectors, but do not have it remove the BAD/*nnnnn* files. This will leave the bad sectors in only the BAD files.

Badsect works by giving the specified sector numbers in a *mknod*(2) system call, creating a regular file whose first block address is the block containing bad sector and whose name is the bad sector number. The file has 0 length, but the check programs will still consider it to contain the block containing the sector. This has the pleasant effect that the sector is completely inaccessible to the containing file system since it is not available by accessing the file.

SEE ALSO

bad144(8), fsck (8)

BUGS

If both sectors which comprise a (1024 byte) disk block are bad, you should specify only one of them to *badsect*, as the blocks in the bad sector files actually cover both (bad) disk sectors.

BOOT(8)

ROM programs. The following programs to call the primary bootstrap may be installed in read-only memories or manually keyed into main memory. Each program is position-independent but should be placed well above location 0 so it will not be overwritten. Each reads a block from the beginning of a device into core location zero. The octal words constituting the program are listed on the left.

RK (drive 0):

```
012700          mov     $rkda,r0
177412
005040          clr     -(r0)           / rkda cleared by start
010040          mov     r0,-(r0)
012740          mov     $5,-(r0)
000005
105710  1:      tstb    (r0)
002376          bge     1b
005007          clr     pc
```

RP (drive 0)

```
012700          mov     $rpmr,r0
176726
005040          clr     -(r0)
005040          clr     -(r0)
005040          clr     -(r0)
010040          mov     r0,-(r0)
012740          mov     $5,-(r0)
000005
105710  1:      tstb    (r0)
002376          bge     1b
005007          clr     pc
```

FILES

/unix — system code
/usr/mdec/rpuboot, /usr/mdec/hpuboot — copies of primary bootstrap
/boot — second stage bootstrap

SEE ALSO

init(8)

NAME

check – disk checking and formatting

SYNOPSIS

/sa/check

DESCRIPTION

Check is the *QU68000* disk checking program. Additionally it has a formatting capability for disks with standard headers. *Check* tests disks for the location of bad sectors and writes the *bad sector file* onto disks. The bad sector file is a list of all bad sectors found on a disk. *MUNIX* uses this information to avoid allocating bad sectors to a user's file. If there is an error in a header, or if there is a read or write error within one sector, that sector is defined as a *bad sector*. If possible the header of this sector is marked.

The devices in the following table are supported by *check*. Devices indicated by *YES* in the column *Formatting* uses standard headers and can be formatted by *check*. For other devices exists a specific standalone formatting program (i.e. *rlformat*).

Supported Devices

Device Name	Disk Type	CSR Address	Formatting
hk	RK06/07	FFFF20	YES
rl	RL01/02	FFF900	NO
hl	RL01/02	FFF910	NO
rm	RM02/03/05	FFFDC0	YES

Check is a standalone program. Load and start it by the *Minitor* (see *Minitor*-Manual). For example type:

.rl	(load from RL02)
./sa/check	(executable file)
.g0	(start the program)

You will get a list of all supported devices (i.e. *rl hl hk rm*). Type the device name and the unit number of the disk to be tested or formatted. The input format for opening a device is as follows:

devname(*unit*) [-r] [-p] | exit

where *devname* is one of the device names from the table above and *unit* is the number of the physical drive to be tested. The option -p opens the disk in *preserve-mode*, while -r opens the disk in *read-only-mode* A missing option opens the disk in *read/write-mode*.
Exit stops execution of the check program.

In *read/write-mode* the contents of the disk is overwritten, bad sectors are marked, the bad sector file is initialized or modified and formatting is possible. This is the proper mode for new disks.
In *preserve-mode* the contents of the disk is left unchanged. Sectors are tested only by reading, no formatting is done, no sector is marked as bad and the contents of an existing bad sector file is not modified.
In *read-only-mode* sectors ar tested only by reading, bad sectors are marked and the bad sector file is initialized or modified. Formatting is

inhibited.
For example (user input is **bold**):

type: devname(unit) [-r] [-p] | exit
: **rl(0) -r** or
: **hk(2)** or
: **exit**

If you entered a legal device name you are now in command mode. You will get a list of available commands. Every command you choose refers to the previously specified device and unit. To leave the command mode simply type **q**. The other commands are explained below. The command descriptions refer to disks opened in *read/write-mode*. If you opened a disk in another mode read the descriptions accordingly:

b *Bad Sector Scan:*
The complete disk is tested. Sectors are first written in increasing order and then read in decreasing order. A bad sector file is written onto the disk.

s *Selected Sector Test:*
Consecutive sectors are tested. Choose the starting sector and the number of sectors to be tested. The sectors are tested alternately: *1st sector*, *last sector*, *2nd sector*, ... to the midst of the given interval. The already existing bad sector file is updated.

a *Append Bad Sectors:*
Bad sectors are appended manually to an existing bad sector file. Type in the numbers of sectors to be marked as bad sectors. Type **−1** to exit from this command.
This command is extremely helpful if you know any bad sectors not detected by the check program.

i *Inspect Bad Sector File:*
List the contents of an existing bad sector file.

r *Random Sector Test:*
Test disk sectors in random order. Exit from this command by pushing INIT. An existing bad sector file is destroyed.

f *Format Disk:*
Write good sector headers and initialize data fields optionally on the complete disk volume or on single tracks.

? *List Commands:*
Print a table of all available commands.

As a proper test strategy for new disks we suggest command **b** (very fast) followed by command **s** with the whole disk as the sector interval (very slow: you better go for lunch). If there is a new bad sector on an already used disk test a small range around the bad sector by command **s** or use command **a** to mark the bad sector manually. Used disks should be checked in *read-only-mode*.

Each command can be interrupted by pushing INIT. Then you will get the *Minitor* prompt. To restart *check* you have to type **g0**.

SEE ALSO

rl(4), rm(4), hk(4), iopage(7), format(8)
Bad Sector Handling (Vol. 2c)
Minitor-Manual

NAME

cron – clock daemon

SYNOPSIS

/etc/cron

DESCRIPTION

Cron executes commands at specified dates and times according to the instructions in the file /usr/lib/crontab. Since *cron* never exits, it should only be executed once. This is best done by running *cron* from the initialization process through the file /etc/rc; see *init*(8).

Crontab consists of lines of six fields each. The fields are separated by spaces or tabs. The first five are integer patterns to specify the minute (0-59), hour (0-23), day of the month (1-31), month of the year (1-12), and day of the week (1-7 with 1=monday). Each of these patterns may contain a number in the range above; two numbers separated by a minus meaning a range inclusive; a list of numbers separated by commas meaning any of the numbers; or an asterisk meaning all legal values. The sixth field is a string that is executed by the Shell at the specified times. A percent character in this field is translated to a new-line character. Only the first line (up to a % or end of line) of the command field is executed by the Shell. The other lines are made available to the command as standard input.

Crontab is examined by *cron* every minute.

FILES

/usr/lib/crontab

Finally, there may be inodes reported by *dcheck* that have 0 links and 0 entries. These occur on the root device when the system is stopped with pipes open, and on other file systems when the system stops with files that have been deleted while still open. A *clri* will free the inode, and an *icheck -s* will recover any missing blocks.

Why did it crash? UNIX types a message on the console typewriter when it voluntarily crashes. Here is the current list of such messages, with enough information to provide a hope at least of the remedy. The message has the form 'panic: ...', possibly accompanied by other information. Left unstated in all cases is the possibility that hardware or software error produced the message in some unexpected way.

blkdev
: The *getblk* routine was called with a nonexistent major device as argument. Definitely hardware or software error.

devtab
: Null device table entry for the major device used as argument to *getblk*. Definitely hardware or software error.

iinit
: An I/O error reading the super-block for the root file system during initialization.

out of inodes
: A mounted file system has no more i-nodes when creating a file. Sorry, the device isn't available; the *icheck* should tell you.

no fs
: A device has disappeared from the mounted-device table. Definitely hardware or software error.

no imt
: Like 'no fs', but produced elsewhere.

no inodes
: The in-core inode table is full. Try increasing NINODE in param.h. Shouldn't be a panic, just a user error.

no clock
: During initialization, neither the line nor programmable clock was found to exist.

swap error
: An unrecoverable I/O error during a swap. Really shouldn't be a panic, but it is hard to fix.

unlink — iget
: The directory containing a file being deleted can't be found. Hardware or software.

out of swap space
: A program needs to be swapped out, and there is no more swap space. It has to be increased. This really shouldn't be a panic, but there is no easy fix.

out of text
: A pure procedure program is being executed, and the table for such things is full. This shouldn't be a panic.

trap
: An unexpected trap has occurred within the system. This is accompanied by three numbers: a 'ka6', which is the contents of the segmentation register for the area in which the system's stack is kept; 'aps', which is the location where the hardware stored the program status word during the trap; and a 'trap type' which encodes which trap occurred. The trap types are:

NAME

dmesg – collect system diagnostic messages to form error log

SYNOPSIS

/etc/dmesg [–]

DESCRIPTION

Dmesg looks in a system buffer for recently printed diagnostic messages and prints them on the standard output. The messages are those printed by the system when device (hardware) errors occur and (occasionally) when system tables overflow non-fatally. If the – flag is given, then *dmesg* computes (incrementally) the new messages since the last time it was run and places these on the standard output. This is typically used with *cron*(8) to produce the error log */usr/adm/messages* by running the command

/etc/dmesg – >> /usr/adm/messages

every 10 minutes.

FILES

/usr/adm/messages	error log (conventional location)
/usr/adm/msgbuf	scratch file for memory of – option

BUGS

The system error message buffer is of small finite size. As *dmesg* is run only every few minutes, not all error messages are guaranteed to be logged. This can be construed as a blessing rather than a curse.

Error diagnostics generated immediately before a system crash will never get logged.

0..814 for RK07

To format one or all tracks of a FUJITSU M2312K drive with an EMULEX SC02 or a DATARAM S04/A controller see *check(8)*.

SEE ALSO

rl(4), rm(4), rx(4), hp(4), hk(4), check(8), mkfs(1M)

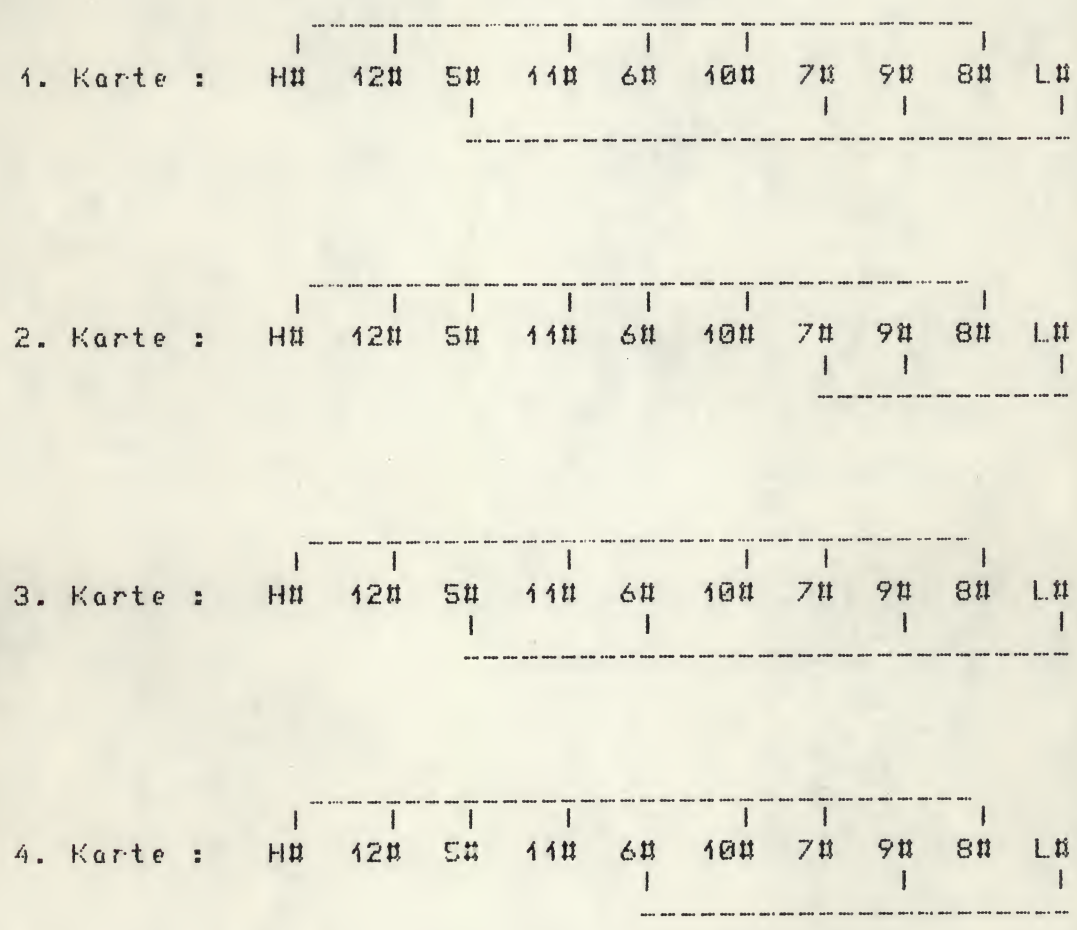
BUGS

Eventually the Minitor response the loading command with 'can't find file'. Ignore the message!

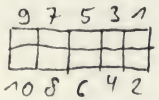
EINSTELLTABELLE GTSC 304 CDLV 11-JJ SLU 4

Adresse 1. Karte	FFFD40	176500
Adresse 2. Karte	FFFD60	176540
Adresse 3. Karte	FFFD80	176600
Adresse 4. Karte	FFFDA0	176640
Adresse Console	FFFF70	177560
Vector Console	C0	60
Adresse MUX-KE	FFFE010	160020
Vector MUX-KE	380	340

BRUECKENEINSTELLUNGEN :

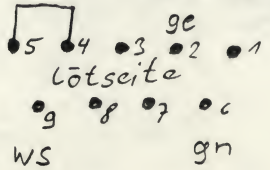


	DLV11J	Rückwand	kabel (Rückwand)		kabel (DSG 970)
	10 pol Pfostenverbinder	9 pol. Cannon-Buchse	9 pol. Cannon-Stiftleiste		25 pol. Cannon-Stiftleiste
Bezeichnung	Pin	Pin	Pin		Pin
	1	1			
GND	2	6	6	gn	7 gn
XMTDATA +	3	2	2	ge	3 ge
	4	7			
	5	3			
	6	8			
RCVDATA-	7	4	4	ws	2 ws
RCVDATA+	8	9	9		
GND	9	5	5		
	10	abgezwickt			



10-pol. Flachkabel

Datenkabel (rund)
CY 2x2x 0,14



Maßstab

Verbindungsplan
DLV11J-Gehäuserückwand-DSG 970

	Name	Tag
Bearb	W Quint	1.12
Gepr		
Norm		

Freimaßtoleranzen

DSG

Ausgabe	Änderung	Tag	Name

Brücke	Stellung	Std.	Anw.	Bedeutung
A 12	H / L	x	x x	Basisadresse Std: 176500 Anw: Bit 15-13 = H, Bit 4-0 = L
A 11	H / L	x	x x	
A 10	H / L	x	x x	
A 9	H / L	x	x x	
A 8	H / L	x	x x	
A 7	H / L	x	x x	
A 6	H / L	x	x x	
A 5	H / L	x	x x	
P 13	I / R	x		Konsoladresse enable / disable
P 15	C - H / C - R	x		Halt on Break, Restart: 173000 G

Brücke	Bs.	Std.	Anw.	Bedeutung
RS 232C	I0 - $0, I- - $-	x		
RS 423	I0 - $0, I- - $-			
RS 422*	I0 - D0, I- - D-			

*R_A = 1 mm Ω
R_B = 1 mm Ω
R_C = 1 mm Ω
R_D = 1 mm Ω

R17, R18: Änderung der Polling-Zeiten s. Tabelle 11 im Manual

Kombinierte Brücken	Std.	Anw.	Bedeutung
V8 V7 V6 V5			
x x 1 0			100
x x 1 x			140
x 1 x 0			200
x 1 x x			240 Verbindungsnr.
x 1 1 0	x		300
x 1 1 x		x	340
1 x x 0			400
			16 H
			LB L
			x 0 keine Verb.
R5 R6 R7 LM1 LM0			
G G G P P	x		LSI 11/2
G G G Q5 Q6			4
IR 0 0 P Q6			5 Interrupt-Level
G IR G P Q7			6
G IR IR P P			7

Kanal:	CH0 Ext.C.0	CH1 Ext.C.1	CH2 Ext.C.2	CH3 Ext.C.3	
A					38,4K
B					19,2K
C	x	x	x	x	9600
D					4800
E					2400
F					1200
G					600
H					300
I					150

Baudrate

Kanal	Std.	Anw.	Std. Anw. 1	Std. Anw. 2	Std. Anw. 3	
QD	5					000 Parity
7D	6					Even Parity
15	7					7 Daten
PE	8					8 Daten
						1 Stopbit
						2 Stopbits
						Parity
						no Parity

Datenformat

0 = enable, 1 = disable

LINIENSTROM

I-	D-	P	
B-	B+	I+	D+

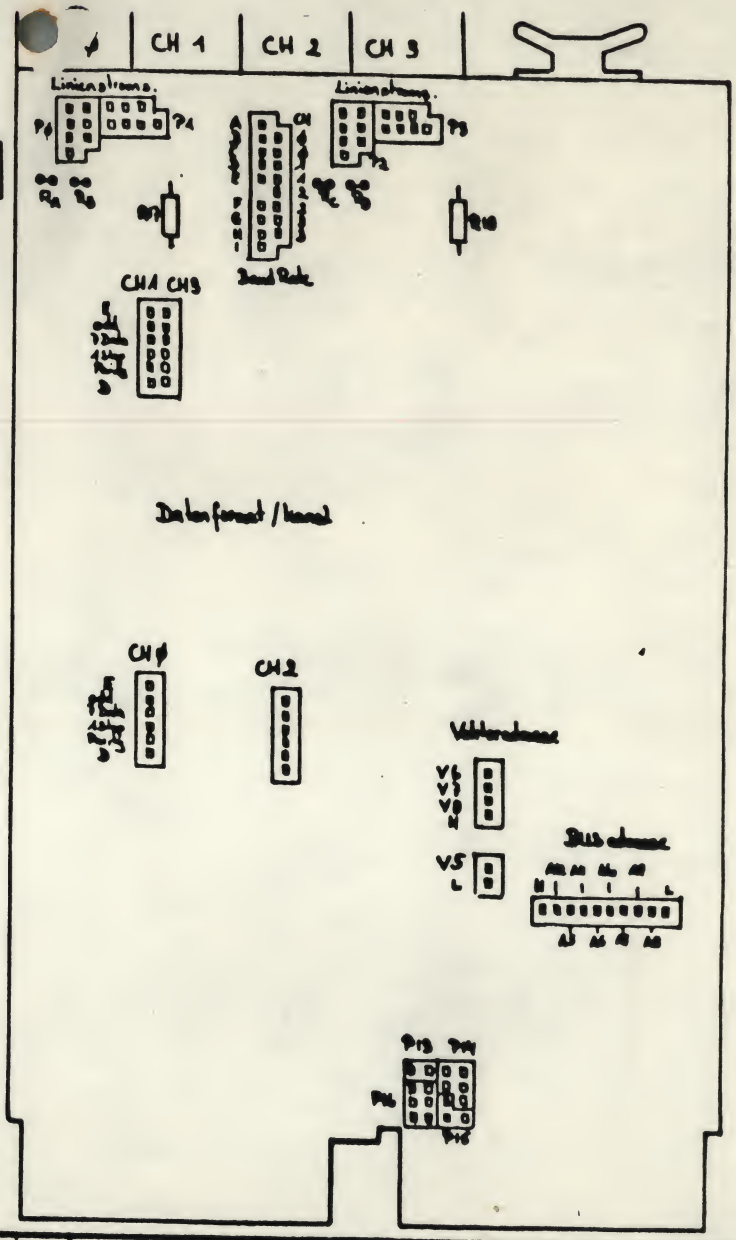
BAUDRATE

A		
B	CH0	Kanal 0
C	CK0	Ext. Clock Kanal 0
D	CH1	Kanal 1
E	CK1	Ext. Clock Kanal 1
	CH2	Kanal 2
F	CK2	Ext. Clock Kanal 2
G	CH3	Kanal 3
H	CK3	Ext. Clock Kanal 3
I		

INTERRUPT

P13		P14	
Konsole		IR	Q5
LM1	Q5	G	Q6
LM0	Q6	R	R7
P	Q7	C	H

P16 P15



Änderung	Tag	Name

	Tag	Name
Bearb.	22.12	
Gepr.		
Norm.		

EINSTELLTABELLE
GTSC 304 = DLV 11 J
B 922.101.3

PERIPHERIE COMPUTER SYSTEME

Signal-name	von: 9 pol. Cannon Stiftleiste Stecker oder Lötstelle etc.	Pin	Leitung	verdrillt	#	Farbe	nach: 25 pol Cannon-Stiftleiste Stecker oder Lötstelle etc.	Pin
DATA OUT		2	Rundkabel		0.14	ws		3
DATA IN		9	"		0,14	br		2
SIGN. GND		6	"		0,14	gr		7
Brücke		4						
		5						

Freimaßtoleranzen		
	83	Tag	Name
Bearb.	1	12	G. Bruns
Gepr.			
Norm.			

Uni-Bremen

Datenkabel

Gehäuserückwand - DSG 970

Maßstab

VERBINDUNGSPLAN

Blatt:

W

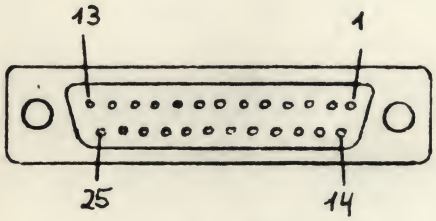
Blätter

DCB RECHNER- & COMPUTER SYSTEME

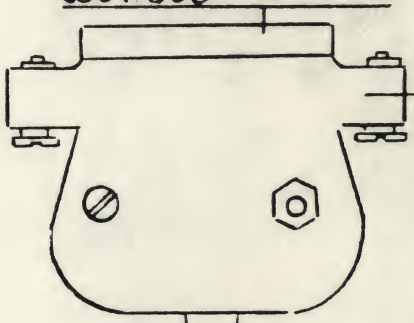
Ausgabe	Änderung	Tag	Name

AVD 7/14 3/78

25pol. Stiftleiste
von Kabelseite



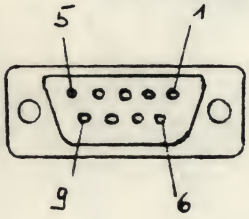
25 pol. Stiftleiste
8501 003 Cannon

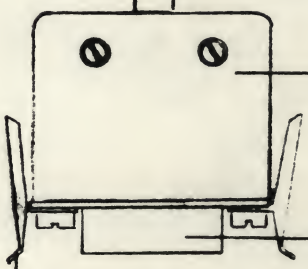


Gehäuse
8590.080
DB51212-1A
Cannon

Datenkabel, abgeschirmt
CY 2x2x0,14
8402.111

9pol. Stiftleiste
von Kabelseite





Gehäuse
8590.051
Harting

9pol. Stiftleiste
8501.001 Cannon

Verriegelungshebel
8590.083

Freimaßtoleranzen				
	83	Tag	Name	Maßstab
	Bearb	1.12.	Buir	Datenkabel Gehäuserückwand – DSG 970
	Gepr			
	Norm			
	DCB			

System CADMUS 9000

PCS

DATE: 24.11.83-sk No: 15a / Speth

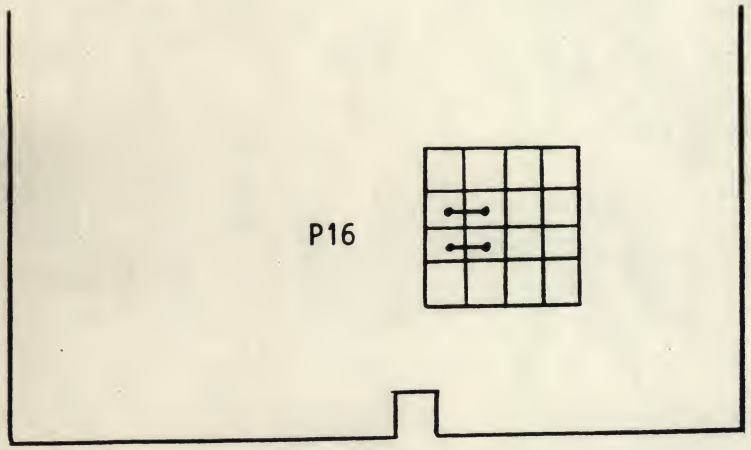
Ref: Interrupt-Level bei der SLU-4/GTSC 304

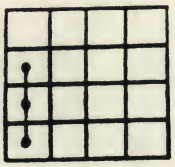
TECH INFO

V:

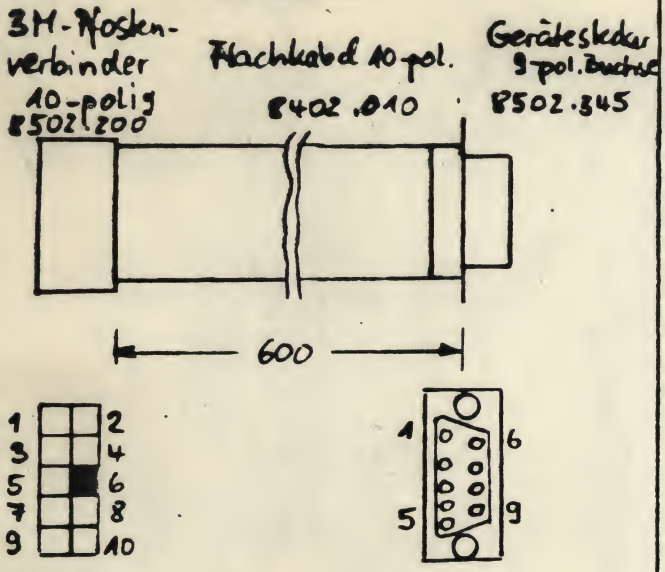
Bei der seriellen Schnittstelle SLU-4 in der Ausführung GTSC 304, B922.101 (nicht beim Original DEC-DLV11-J-Board) ist der Interrupt-Level 4 einzustellen. Der Interrupt-Level spielt zwar bei Schnittstellen, die über den MUX-KE laufen, keine Rolle. Die Systemkonsole arbeitet aber interrupt-gesteuert. Damit kann es zu Systemabstürzen kommen, wenn:

- die Baugruppe GTSC 304 auf Level "LSI11/2" eingestellt ist, und
- ein Controller hinter der GTSC 304 mit Interrupt-Level 5 (oder 6 oder 7) arbeitet, und
- beide Einheiten gleichzeitig einen Interrupt absetzen.

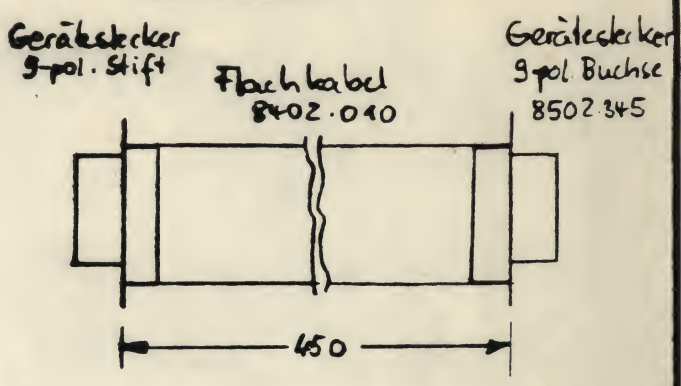


nicht:  !

Kabel 1



Kabel 2



Signal-bezeichnung	DLV11-J 10 pol. 3M	Steckerfeld 9-pol. Geräte Buchse	Verb. kabel 9-pol. Geräte-Stift	Verb. kabel 9-pol. Geräte Buchse	
NC	1	1	1	1	
SIG GND	2	6	6	6	
DATA IN	3	2	2	2	
NC	4	7	7	7	
NC	5	3	3	3	
NC	6	8	8	8	
DATA OUT-	7	4	4	4	
DATA OUT+	8	9	9	9	
SIG GND	9	5	5	5	
NC	10	—	—	—	

Ausgabe	Änderung	Tag	Name

Freimaßtoleranzen

	Tag	Name
83		
Bearb	12.12.	Westphal
Gepr		
Norm		

PCS PERIPHERIE COMPUTER SYSTEME

Kabel 1,2

Kabel DLV11-J → Steckerfeld

Maßstab

SMO 70/83-1961